EMC EMISSION - TEST REPORT

Report Number	:	**64.760.10.5012.01 – (E)**	Date of Issue:	2010-03-11

Model / Serial No.	:	MN-A001-A08Z, MN-A002-A08Z, MN-A001-A09Z, MN-A002-A09Z, MN-A003-A09Z (Z=0-9, a-z or A-Y indicates series number, the output current range is from 100mA to 300mA by step of 10mA) / NIL
Product Type	:	AC Power Adaptor
Applicant	:	XIAMEN METROTEC INDUSTRY CO.,LTD.
Manufacturer	:	XIAMEN METROTEC INDUSTRY CO.,LTD.
License holder	:	XIAMEN METROTEC INDUSTRY CO.,LTD.
Address	:	NO.46, Meixi Road, Eastern Sea Rim, Siming Industrial Park, Tongan,
	:	Xiamen, PEOPLE'S REPUBLIC OF CHINA
Test Result	:	■ **Positive** ☐ **Negative**
Total pages including Appendices	:	38

JIANGSU TÜV PRODUCT SERVICE LTD. GUANGZHOU BRANCH reports apply only to the specific samples tested under stated test conditions. Construction of the actual test samples has been documented. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. The manufacturer/importer is responsible to the Competent Authorities in Europe for any modifications made to the production units which result in non-compliance to the relevant regulations. Jiangsu TÜV Product Service Ltd. Guangzhou Branch shall have no liability for any deductions, inferences or generalizations drawn by the client or others from Jiangsu TÜV Product Service Ltd. Guangzhou Branch issued reports.

Jiangsu TÜV Product Service Ltd. Guangzhou Branch

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DIRECTORY - EMISSIONS

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EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to the following regulations:

☐ - EN 61000-6-3:2007

☐ - EN61000-6-4:2007

☐ - EN 55011:2007+A2:2007 ☐ - Group 1 ☐ - Group 2
☐ - Class A ☐ - Class B

☐ - EN 55013:2001+A1:2003+A2:2006

☐ - EN 55014-1:2006 ☐ - Household appliances and similar
☐ - Portable tools
☐ - Semiconductor devices

☐ - EN 55015:2006

■ - EN 55022:2006+A1:2007 ☐ - Class A ■ - Class B

■ - EN 61000-3-2:2006
■ - EN 61000-3-3:1995+A1:2001+A2:2005

■ - FCC Part 15 ☐ - Class A ■ - Class B

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Environmental Conditions In The Laboratory:

	Actual
Temperature:	: 23°C
Relative Humidity:	: 55%
Atmospheric Pressure:	: 1040mBar

Power Supply Utilized:

Power supply system : 240V / 50Hz and 120V / 60Hz / 1ϕ

STATEMENT OF MEASUREMENT UNCERTAINTY

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities that can account for a nominal measurement error of ±4dB. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Symbol Definitions:

■ - Applicable
☐ - Not Applicable

Test laboratory:

■ - CEPREI
Add: No 110 Dongguanzhuang Road, Tianhe District, Guangzhou 510610 P. R. C.

■ - TÜV Product Service Ltd. Guangzhou Branch
Add: 26/F, Dongbao Tower, #767 Dongfeng Road East. (510600) Guangzhou, P.R.China

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26/F, Dongbao Tower, #767 Dongfeng Road East. (510600) Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

Emissions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage)

The *CONDUCTED EMISSIONS (INTERFERENCE VOLTAGE)* measurements were performed at the following test location:

☐ - Test not applicable

■ - Test Area B (CEPREI) - Shielded room : Bare shielded room (for FCC TEST)
■ - Test Area (TUV-SUD) –Laboratory open area (for CE TEST)

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
■ -	ESCS30	Rohde & Schwarz	EMI Test Receiver	CEPREI
■ -	ESH3-Z5	Rohde & Schwarz	AMN	CEPREI
☐-	DIA1512C	Chase	Discontinuous Interference Analyzer	CEPREI
☐-	KNW-403D	Advantest	AMN	CEPREI
☐ -		CEPREI	Artificial Hand	--
☐ -	UNAT-5	Mini-Circuits	5dB Attenuator	CEPREI
■ -	ESCI	Rohde & Schwarz	EMI Test Receiver	TUV-SUD
■ -	ENV216	Rohde & Schwarz	AMN	TUV-SUD
☐-	ESH2-Z3	Rohde & Schwarz	Passive voltage probe	TUV-SUD
■ -	RSU-M314-N	Compliance Direction Systems Inc.	RF Switch Box	TUV-SUD
☐ -			Artificial Hand	TUV-SUD

Remarks: All test equipments used are calibrated on a regular basis.

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Emissions Test Conditions: RADIATED EMISSIONS (Magnetic Field)

The *RADIATED EMISSIONS (MAGNETIC FIELD)* measurements were performed at the following test location:

■ - Test not applicable

☐ - Test Area A (CEST) - Anechoic ferrite lined shielded room
☐ - Test Area B (CEPREI) - Anechoic ferrite lined shielded room

Testing was performed at a test distance of :

☐ - 3 meters
☐ - 30 meters

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
☐ -	HFH 2-Z2	Rohde & Schwarz	Loop Antenna	CEPREI
☐ -	ESCS30	Rohde & Schwarz	EMI Test Receiver	CEPREI
☐ -	HM020	Rohde & Schwarz	Antenna, Tri-loop	CEST

Remarks: All test equipments used are calibrated on a regular basis.

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Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *RADIATED EMISSIONS (ELECTRIC FIELD)* measurements, in the frequency range of 30 MHz-1000 MHz, were tested in a horizontal and vertical polarization at the following test location :

☐ **- Test not applicable**

■ - Test Area B (CEPREI) - Anechoic ferrite lined shielded room

Testing was performed at a test distance of :

■ - 3 meters
☐ - 10 meters

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
■ -	ESU40	Rohde & Schwarz	EMI Test Receiver	CEPREI
■ -	ETS3142B	ETS	Antenna, Log Periodic	CEPREI

Remarks: All test equipments used are calibrated on a regular basis.

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Emissions Test Conditions: INTERFERENCE POWER

The *INTERFERENCE POWER* measurements were performed by using the absorbing clamp on the mains and interface cables in the frequency range 30 MHz - 300 MHz at the following test location :

■ - Test not applicable

☐ - Test Area B (CEPREI) - Shielded room : Bare shielded room

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
☐ -	MDS-21	Rohde & Schwarz	Absorbing Clamp	(CEPREI)
☐ -	ESCS 30	Rohde & Schwarz	EMI Test Receiver	(CEPREI)

Remarks: All test equipments used are calibrated on a regular basis.

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Emissions Test Conditions: CONDUCTED EMISSIONS (Harmonics and Flicker)

The *Harmonic Current Emissions and Voltage Fluctuations and Flicker* measurements were performed at the following test location :

■ - Test not applicable

☐ - Test Area (CEPREI) - Laboratory open area
☐ - Test Area (TÜV PS) –Laboratory open area

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
☐ -	140-TMX	PACIFIC	Power frequency test system	CEPREI
☐ -	DPA 503	EMTEST	Power Analyzer	CEPREI
☐ -	PCR6000LA	Kikusui	Multi purpose power supply	TÜV PS
☐ -	PM6000-1	Voltech	Power anyalyser	TÜV PS
☐ -	IMP555	Voltech	Impedance network	TÜV PS

Remarks: All test equipments used are calibrated on a regular basis.

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Equipment Under Test (EUT) Test Operation Mode - Emissions Tests:

The equipment under test was operated under the following conditions during emissions testing:

☐ - Standby

☐ - Test Program (H - Pattern)

☐ - Test Program (Color Bar)

☐ - Test Program (Customer Specified)

■ - Normal Operating Mode

☐ - _____

_____

_____

Configuration of the equipment under test:

■ - See Constructional Data Form in Appendix B

■ - See Product Information Form(s) in Appendix B

The following peripheral devices and interface cables were connected during the testing:

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

■ - unshielded power cable

☐ - unshielded cables

☐ - shielded cables TUVPS.No.: _____

☐ - customer specific cables

☐ - _____

☐ - _____

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Emissions Test Results:

Conducted Emissions, 150 kHz - 30 MHz

■ - PASS ☐ - FAIL ☐ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: The highest emissions were detected in full load.

Radiated Emissions (Magnetic Field), 10 kHz - 30 MHz

☐ - PASS ☐ - FAIL ■ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks:

Radiated Emissions (Electric Field), 30 MHz - 1000 MHz

■ - PASS ☐ - FAIL ☐ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks: f<108MHz, no tests applied above 1GHz.

The highest emissions were detected in full load.

Interference Power at the Mains and Interface Cables, 30 MHz - 300 MHz

☐ - PASS ☐ - FAIL ■ - NOT APPLICABLE

Minimum limit margin _____ dB at _____ MHz

Maximum limit exceeding _____ dB at _____ MHz

Remarks:

Harmonic Current Emissions and Voltage Fluctuations and Flicker

☐ - PASS ☐ - FAIL ■ - NOT PERFORMED

Harmonic measurement exceeding limit _____ Above at _____ Harmonic

Flicker measurement exceeding limit _____ Above the _____ Requirement

Remarks:

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China

GENERAL REMARKS:

According to EN61000-3-2:2006 Clause 7, limits are not specified for equipment with a rated power of 75W or less, other than lighting equipment; The EUT has a lower rated power and is not lighting equipment, so harmonic test is not applied on it.
According to EN61000-3-3/A2:2005 Clause 6, tests need not be made on equipment which is unlikely to produce significant voltage fluctuations or flicker, The EUT is unlikely to produce significant voltage fluctuations or flicker, so flicker test is not applied on it.

MN-A001-A08Z and MN-A002-A08Z are the same in construction except different model name; MN-A001-A09Z, MN-A002-A09Z and MN-A003-A09Z are the same in construction except different model name.
Models MN-A001-A08Z/MN-A002-A08Z and MN-A001-A09Z/MN-A002-A09Z/MN-A003-A09Z are similar except different output rating, different parameter of transformer and some components.
The difference between MN-A002-A080 and MN-A002-A08Z (Z=1-9, a-z or A-Y) is the model name only;
The difference between MN-A002-A090 and MN-A002-A09Z (Z=1-9, a-z or A-Y) is the model name only;

So emission tests are applied to MN-A002-A080 and MN-A002-A090, other model are deemed to fulfill the relevant emission requirements without tests.

SUMMARY:

All tests according to the regulations cited on page 3 were

■ - Performed

☐ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements cited on page 3.

☐ - **Does not** fulfill the general approval requirements cited on page 3.

Testing Start Date: 2010-01-12

Testing End Date: 2010-03-10

- JIANGSU TÜV PRODUCT SERVICE LTD. GUANGZHOU BRANCH -

Reviewed by: Technical Reviewer

Kitty Xu
Assistant Department Manager

Prepared by:

Mike Zhuo
EMC Test Engineer

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Photograph of Test Setup:

Conducted Emissions, 150 kHz - 30 MHz

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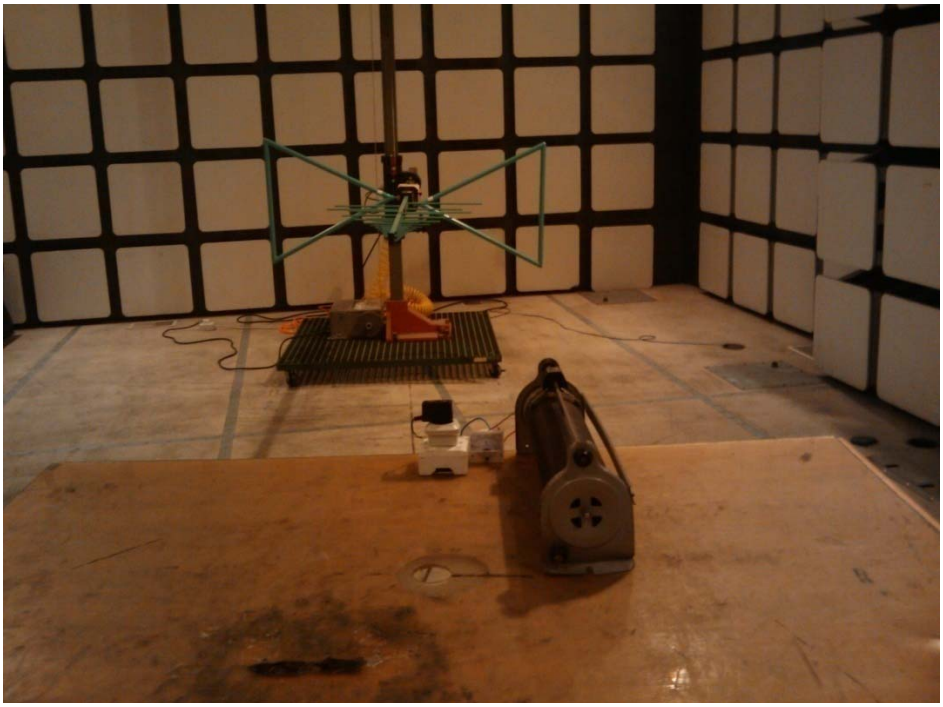
Photograph of Test Setup:

Radiated Emissions (Electric Field), 30 MHz - 1000 MHz



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Photograph of Test Setup:

Harmonic Current Emissions and Voltage Fluctuations and Flicker

■ -Not Performed

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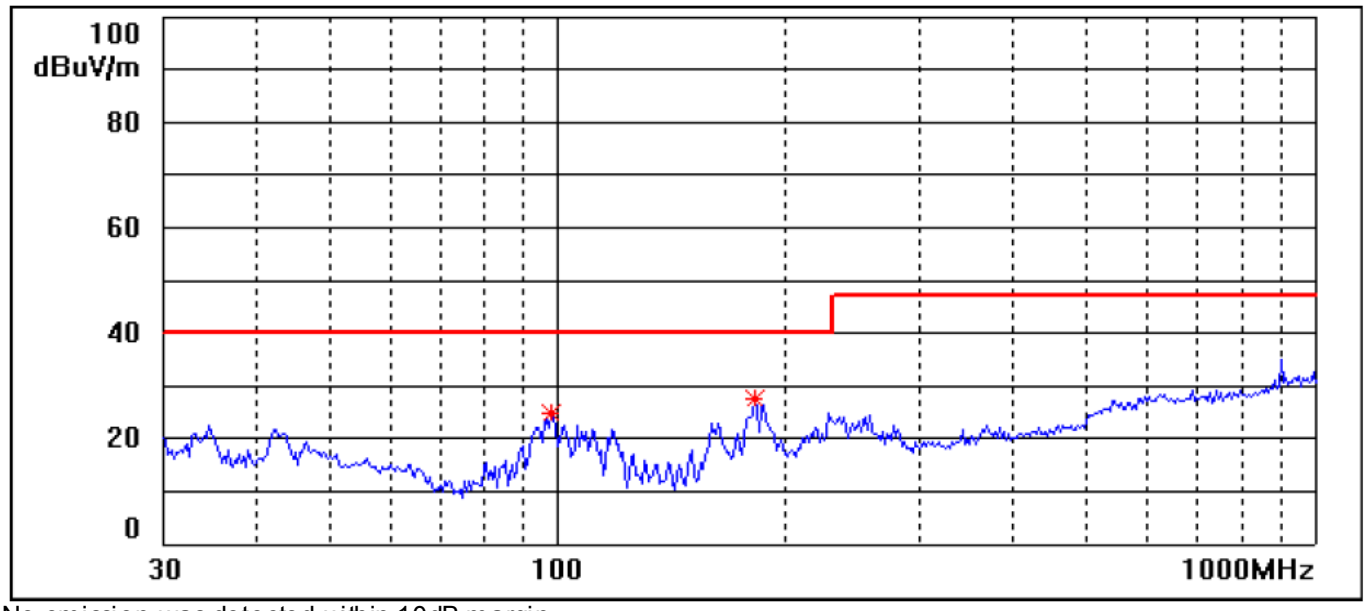
Appendix A

Test Data Sheets

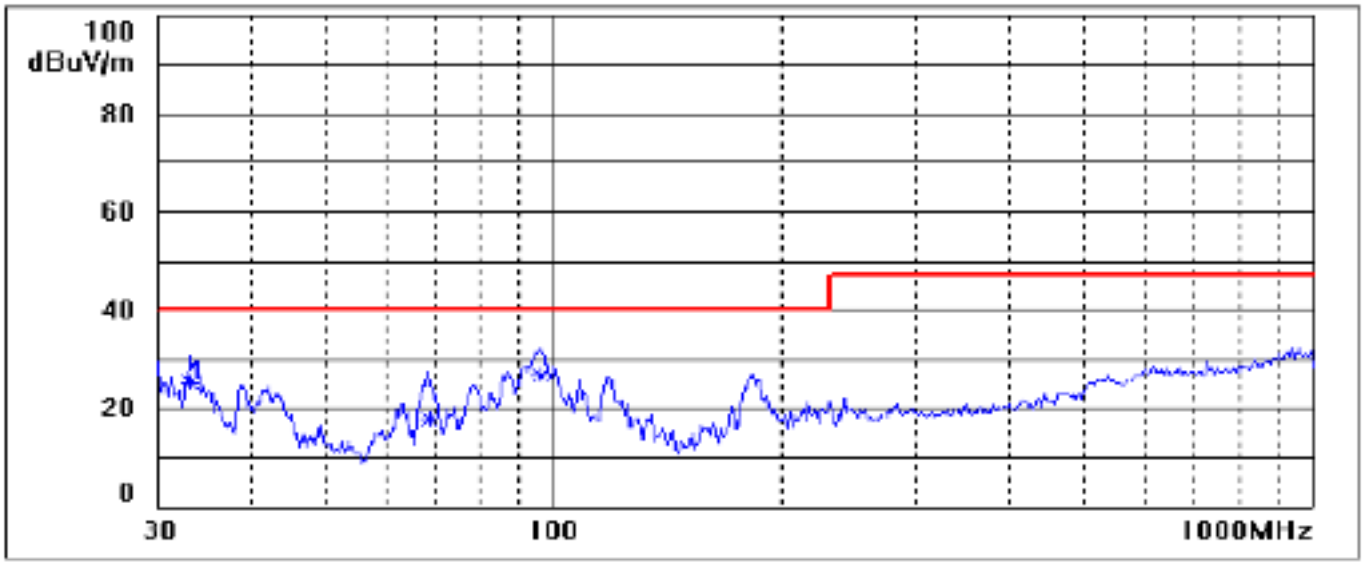
Radiated Emission (30MHz-1000MHz)

Polarization: Horizontal



No emission was detected within 10dB margin

Polarization: Vertical



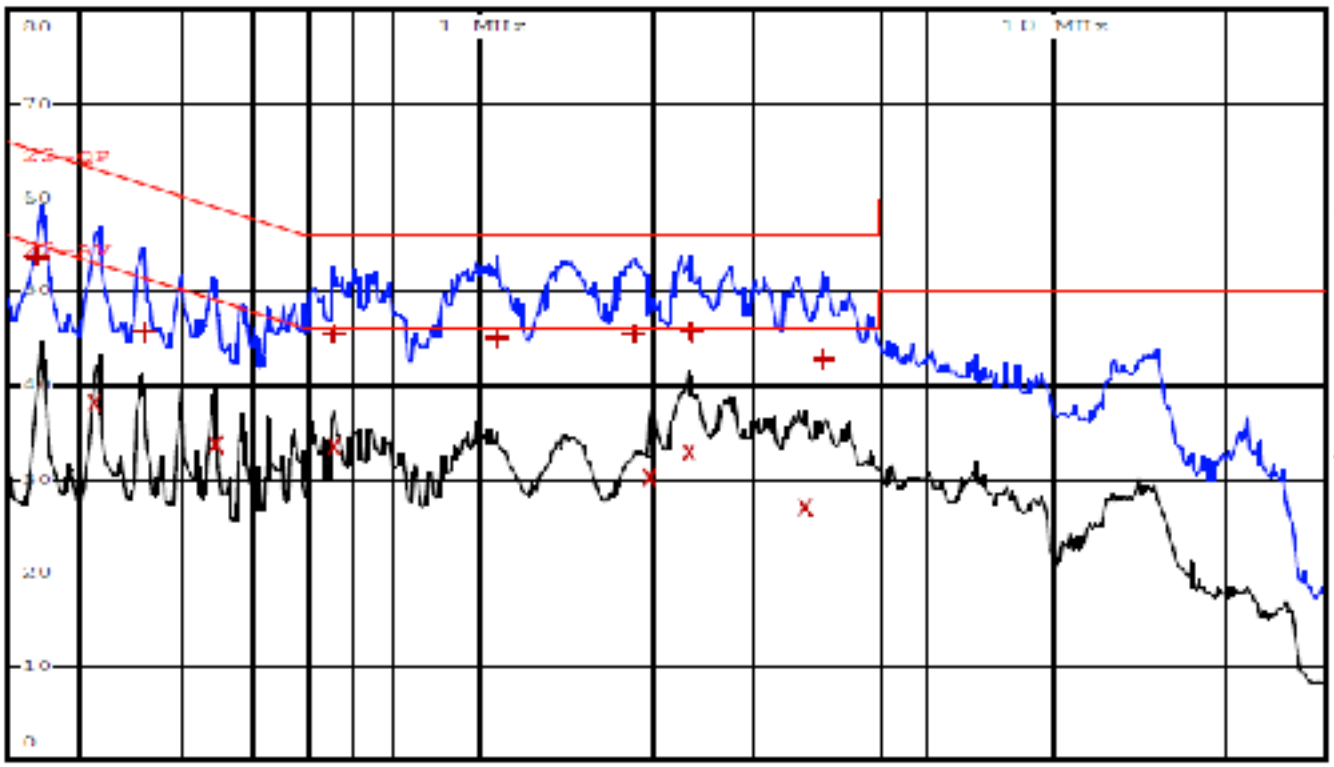
MEASUREMENT RESULT

Frequency	Level	Limit
MHz	dBuV/m	dBuV/m
33.125	25.3	40
68.573	20.5	40
96.290	26.8	40

Model : MN-A002-A090
Operation Mode : operating with resistance load
Test voltage : 240 Vac,50 Hz

	Date	Name
Tested by	2010-03-10	Mike Zhuo

Conducted Emission (150KHz-30MHz)

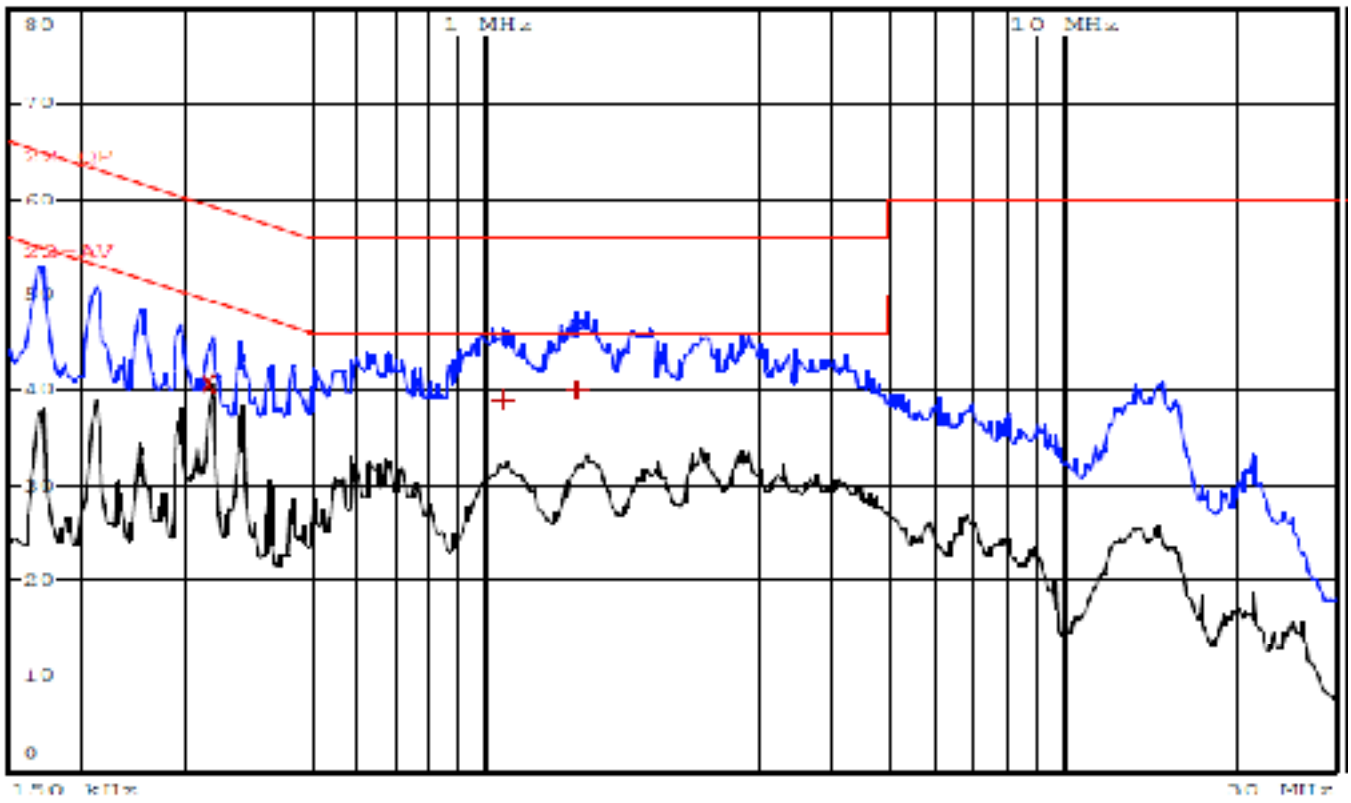


TRACK	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
Quasi Peak	170 kHz	53.5M	-11.37
Average	214 kHz	38.11	-14.92
Quasi Peak	258 kHz	45.51	15.07
Average	302 kHz	39.67	-15.52
Quasi Peak	554 kHz	45.45	-10.54
Average	554 kHz	33.30	12.50
Quasi Peak	1.070 MHz	44.99	-11.00
Quasi Peak	1.862 MHz	45.38	-10.61
Average	2 MHz	30.04	15.95
Average	2.34 MHz	32.85	-13.14
Quasi Peak	2.344 MHz	45.71	-10.28
Average	3.72 MHz	27.06	-18.93
Quasi Peak	4.012 MHz	42.69	-13.30

Model : MN-A002-A090
Operation Mode : operating with resistance load
Test voltage : 240 Vac,50 Hz
Conduct Line/Port : L

	Date	Name
Tested by	2010-03-09	Mike Zhuo

Conducted Emission (150KHz-30MHz)



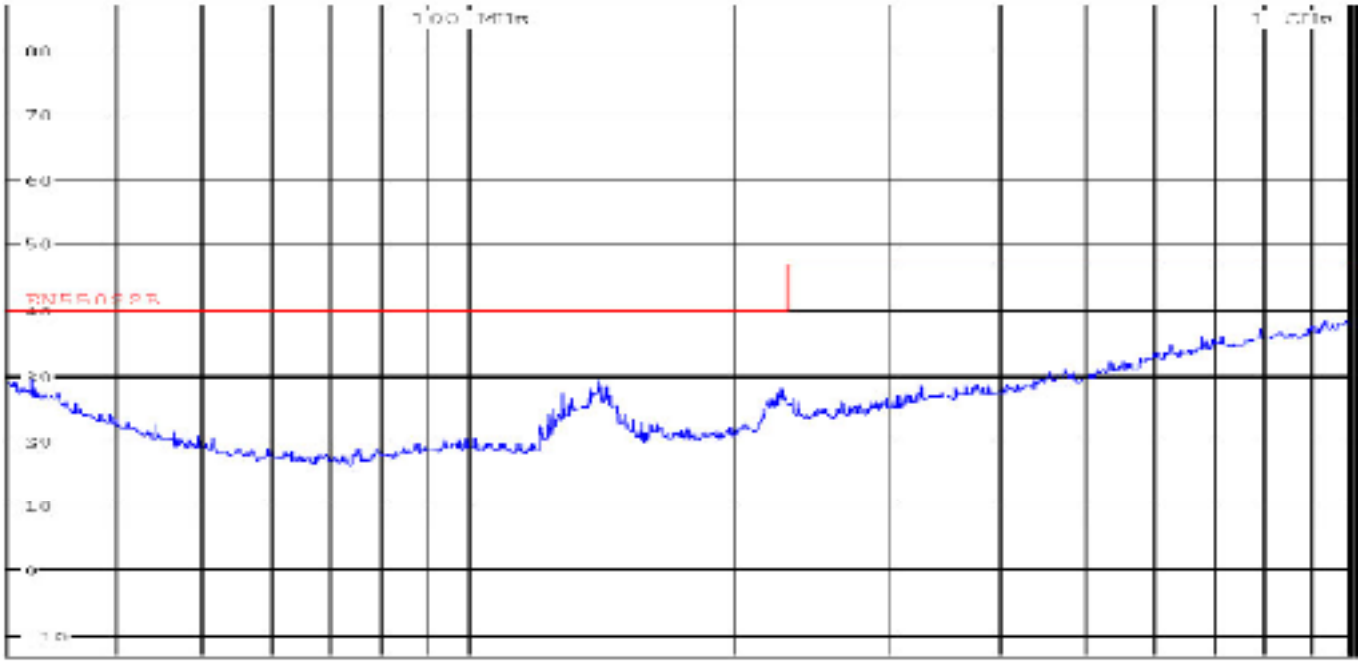
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
Average	334 kHz	40.56	-8.78
Quasi Peak	1.07 MHz	39.04	-16.95
Quasi Peak	1.442 MHz	39.94	-16.05

Model : MN-A002-A090
Operation Mode : operating with resistance load
Test voltage : 240 Vac,50 Hz
Conduct Line/Port : N

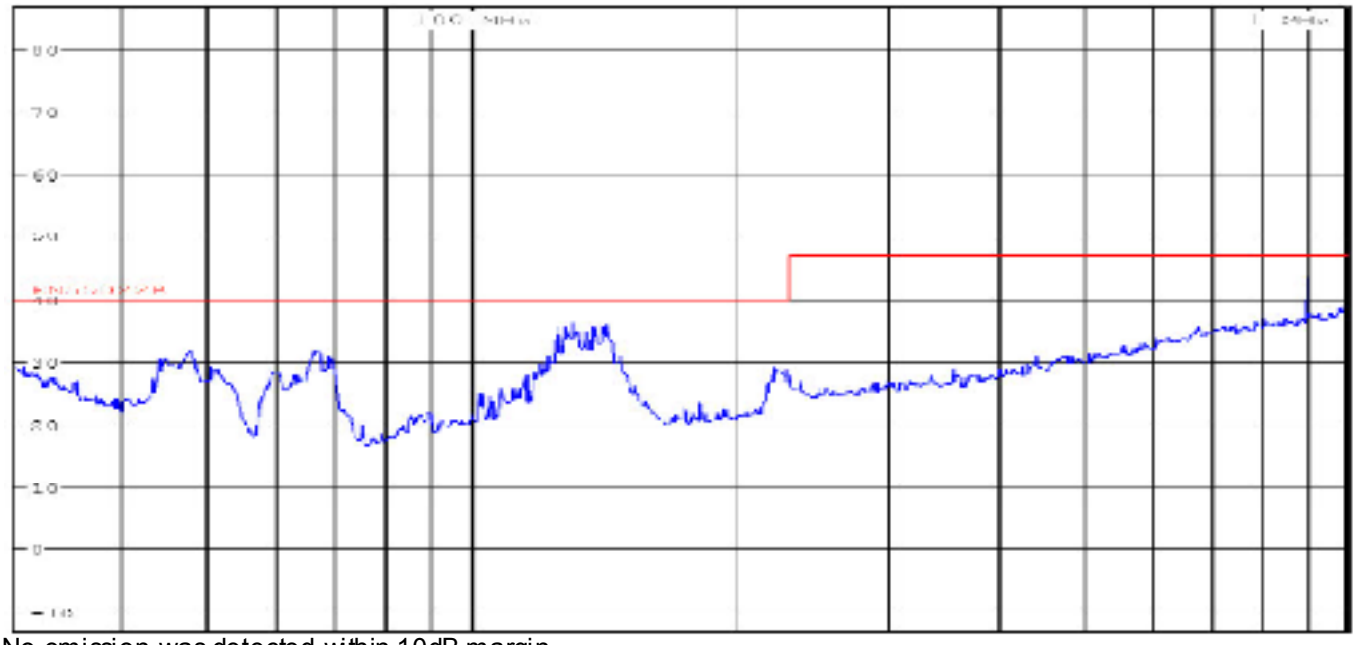
	Date	Name
Tested by	2010-03-09	Mike Zhuo

Radiated Emission (30MHz-1000MHz)

Polarization: Horizontal



Polarization: Vertical

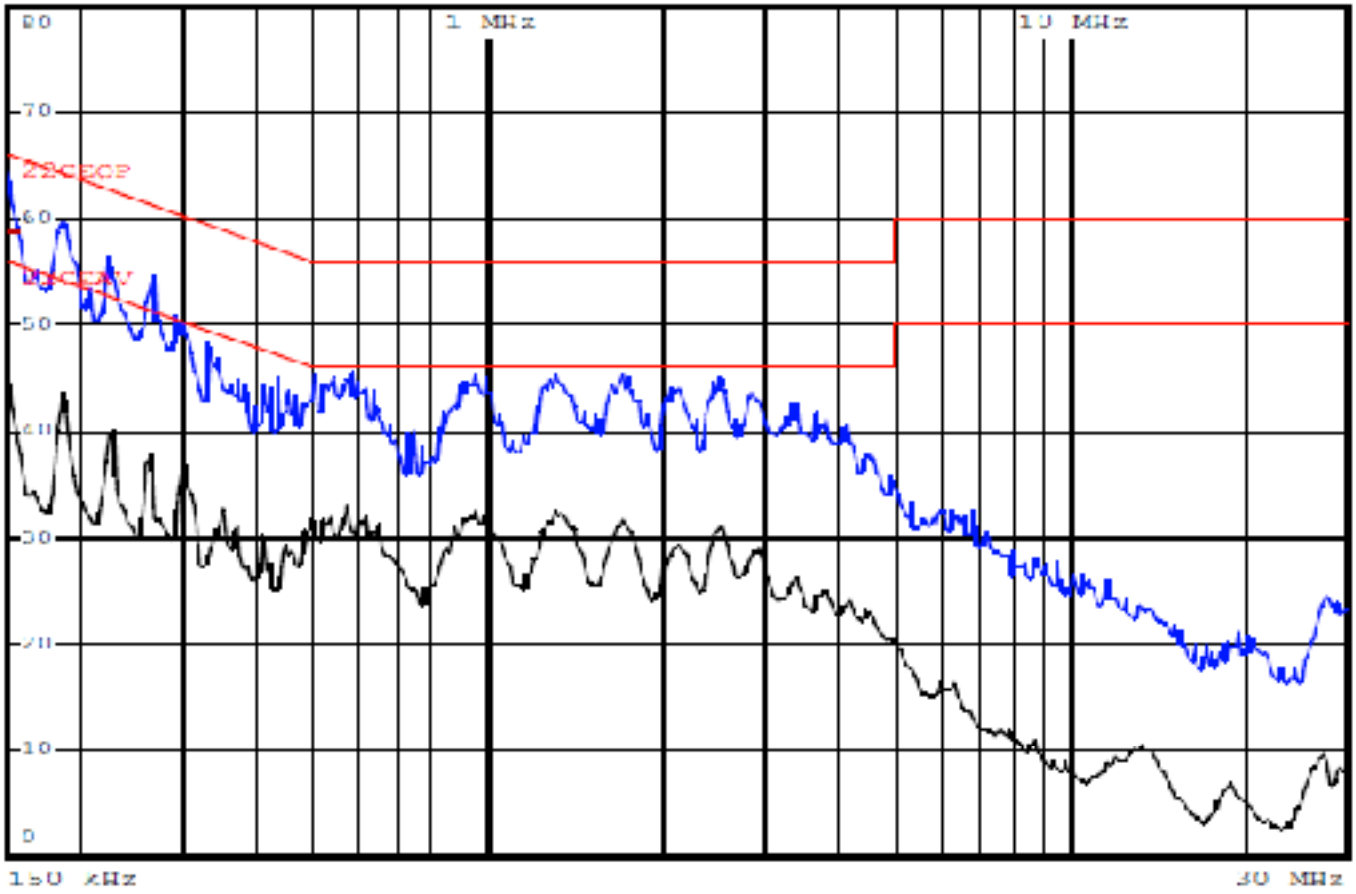


No emission was detected within 10dB margin

Model	: MN-A002-A080
Operation Mode	: operating with resistance load
Test voltage	: 240 Vac,50 Hz

	Date	Name
Tested by	2010-01-12	Mike Zhuo

Conducted Emission (150KHz-30MHz)

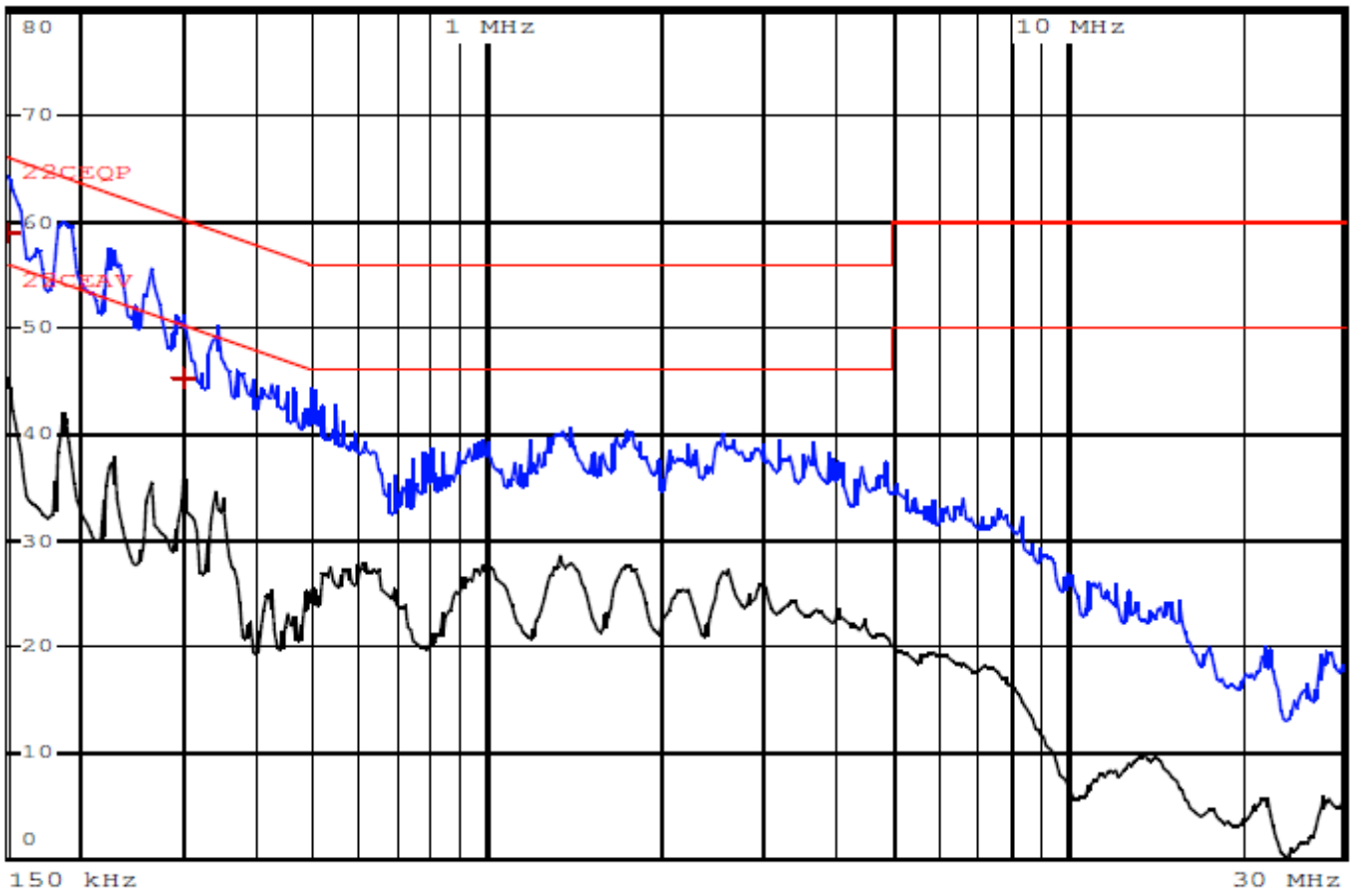


TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
Quasi Peak	150 kHz	58.62	-7.37

Model : MN-A002-A080
Operation Mode : operating with resistance load
Test voltage : 240 Vac,50 Hz
Conduct Line/Port : L

	Date	Name
Tested by	2010-01-12	Mike Zhuo

Conducted Emission (150KHz-30MHz)



TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
Quasi Peak	150 kHz	58.88	-7.11
Quasi Peak	298 kHz	45.14	-15.14

Model : MN-A002-A080
Operation Mode : operating with resistance load
Test voltage : 240 Vac,50 Hz
Conduct Line/Port : N

	Date	Name
Tested by	2010-01-12	Mike Zhuo

Appendix B

Constructional Data Form

and

Product Information Form(s)

Any safety relevant information or constructional aspect concerning the sample or equipment under test as submitted by the applicant / report holder / certificate holder or any authorized agent is deemed to have no adverse effect on the electromagnetic compatibility (EMC) performance. Insofar as safety or compliance with Low Voltage Directive (LVD) or any relevant directive is concerned, the applicant / report holder / certificate holder or any authorized agent is required, by virtue of the relevant EU Directive provisions, to have satisfied that the product concerned (for which a sample was tested) meets with LVD or other relevant directives before placing it on the market.

Where applicable, changes or modifications made to the original sample submitted for testing are documented herein.The applicant or manufacturer shall ensure that such changes or modifications are applied to the production units. Any further changes or modifications made to the production units may void the validity of this test report unless such changes or modifications have been formally assessed by Jiangsu TÜV Product Service Ltd. Guangzhou Branch through technical evaluations or other means as appropriate and it has been confirmed that the EMC performance of such units is not adversely affected.

The enclosed, if any, circuit diagram / parts list / printed circuit board diagram / component layout / user manual are strictly for reference only. Jiangsu TÜV Product Service Ltd shall not be held responsible for any error or omission in such documents. It is the manufacturer's responsibility to ensure that production units conform to the tested sample.

Application Form 申请表

1. APPLICANT 申请人 (Certificate Holder 持证方)

Full name of company 公司全称: 厦门玛司特电子工业有限公司/XIAMEN METROTEC INDUSTRY CO.,LTD.	Client No. 客户号码:
Address 地址: 厦门市同安区美溪道思明工业园 43,45,46 号/NO46,Meixi Road,Eastern Sea Rim,Siming Industrial Park, Tongan,Xiamen	
Contact name 联系人: 罗伟/weiluo	Telephone 电话: 0592 7118960
Email 电子邮件: weiluo@masterem.com	Telefax 电传: 0592-7110988

2. MANUFACTURING SITE / FACTORY (of the product to be certified) 产品生产厂

Name 名称: 厦门玛司特电子工业有限公司/XIAMEN METROTEC INDUSTRY CO.,LTD.	Client No. 客户号码:
Address 地址: 厦门市同安区美溪道思明工业园 43,45,46 号/NO46,Meixi Road,Eastern Sea Rim,Siming Industrial Park, Tongan,Xiamen	
Contact person 联系人: 罗伟/weiluo	Telephone 电话: 0592 7118960
Email 电子邮件: weiluo@masterem.com	Telefax 电传: 0592-7110988

3. CB MANUFACTURER (for CB certification only) CB 认证产品制造商

Name 名称: 厦门玛司特电子工业有限公司/XIAMEN METROTEC INDUSTRY CO.,LTD.	Client No. 客户号码:
Address 地址: 厦门市同安区美溪道思明工业园 43,45,46 号/NO46,Meixi Road,Eastern Sea Rim,Siming Industrial Park, Tongan,Xiamen	
Contact person 联系人: 罗伟/weiluo	Telephone 电话: 0592 7118960
Email 电子邮件: weiluo@masterem.com	Telefax 电传: 0592-7110988

4. REPRESENTATIVE (for the above Applicant) 申请人代理人信息

Name 名称:	
Address 地址:	
Contact person 联系人:	Telephone 电话:
Email 电子邮件:	Telefax 电传:

5. TECHNICAL DATA 技术数据 (Use attachment if space is not sufficient 如果不够地方填写，请以附件加以补充)

Type of product 产品名称: AC Power Adapter

Type designation 型号:
MN A001 A00Z, MN A002 A00Z, MN A001 A09Z, MN A002 A09Z, MN A003 A09Z

Ratings 额定参数: Input: AC 100-240V, 50-60Hz, 0.2Amax
Output: MN A001 A00Z, MN A002 A00Z（输出电压 7.5V），MN A001 A09Z, MN A002 A09Z, MN A003 A09Z（输出电压 9V），输出电流 100-300mA，10mA 步进; see the next page below for details
Brand name 商标: Meic

Other information, other/additional manufacturing site/factory 其他信息, 其他制造地点/工厂:

6. SERVICE REQUESTED 申请的服务

TUV Mark	☒ GS Mark
☒ CB Certification	EMC T-Mark
TUV Bauart Geprüft (Type Tested)	☒ AOC LVD (CE) ☒ AOC EMC ☐ AOC RoHS ☐ AOC MD (CE)
FCC Verification	☒ Test Report CE/EMC+SAFETY
Others CCC	☒ UL+CUL

如贵机构本次报申请的项目是基于现有项目或已获有效证书的改动，请注明如下/ If the application is based on the existing valid certificate/project, please list:
原证书号/Certificate No.: ，项目号/Project No.:
备注/Remarks:

7. SIGNATURE 签名

- By this signature 据此签名,
- I accept the "Standard Terms and Conditions", and "Testing and Certification Regulations" of TÜV SÜD Product Service GmbH and TÜV SÜD. I declare that I have not placed any comparable order for testing/evaluation of this product with any other testing organization.
- 本人接受 TÜV SÜD Product Service GmbH and TÜV SÜD"有关标准的条款及条件"和"测试及认证规则"，本人声明没有向任何其他的测试组织订购这一种产品的测试或评估。
- I confirm that products from all multiple manufacturing sites (if any) are identical. 本人确此声明以及以上列名制造厂所生产产品一致性

Place and date 地点和日期	Name of company 公司名称	Authorized Signature/chop 签名并盖章
厦门 2010.01.15	厦门玛司特电子工业有限公司	孙国秀

8. Remark 备注:

Basically, this form should be filled-in by the applicant with signature & company chop. For special case, a in written authorized person can handle the

Please use an attachment if space in lines is not sufficient. Please send the completed original form to us, thank you!

Appendix C

Constructional Photographs
of
Equipment under test (EUT)

Any safety relevant information or constructional aspect concerning the sample or equipment under test as submitted by the applicant / report holder / certificate holder or any authorized agent is deemed to have no adverse effect on the electromagnetic compatibility (EMC) performance. Insofar as safety or compliance with Low Voltage Directive (LVD) or any relevant directive is concerned, the applicant / report holder / certificate holder or any authorized agent is required, by virtue of the relevant EU Directive provisions, to have satisfied that the product concerned (for which a sample was tested) meets with LVD or other relevant directives before placing it on the market.

Appendix D

Measurement Protocol for FCC, VCCI and/or AUSTEL

■ - **FCC**

☐ - **VCCI**

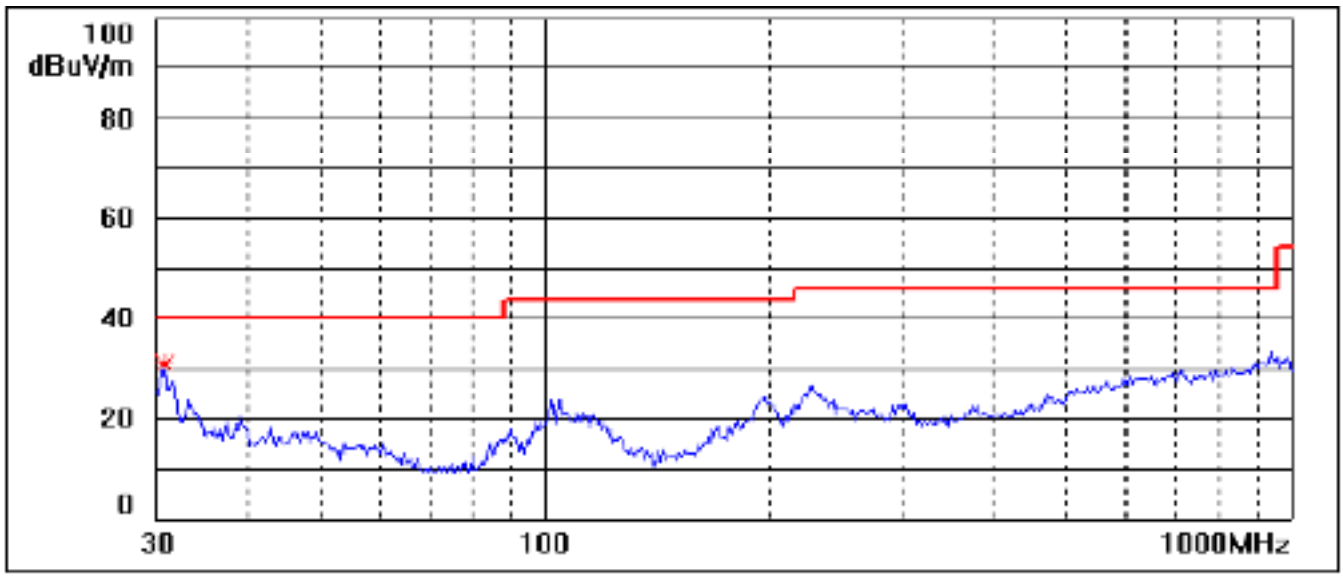
☐ - **AUSTEL**

Radiated Scan
Pursuant To FCC Part 15 Section 15.109 Emissions Requirements

Test Requirement:	FCC Part15 Subpart B
Test Method:	ANSI C63.4: 2003
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Class:	Class B
Limit:	40.0 dBμV/m between 30MHz & 88MHz
	43.5 dBμV/m between 88MHz & 216MHz
	46.0 dBμV/m between 216MHz & 960MHz
	54.0 dBμV/m above 960MHz
Detector:	Peak for pre-scan (120kHz resolution bandwidth)
	Quasi-Peak if maximised peak within 6dB of limit

Radiated Emission (30MHz-1000MHz)

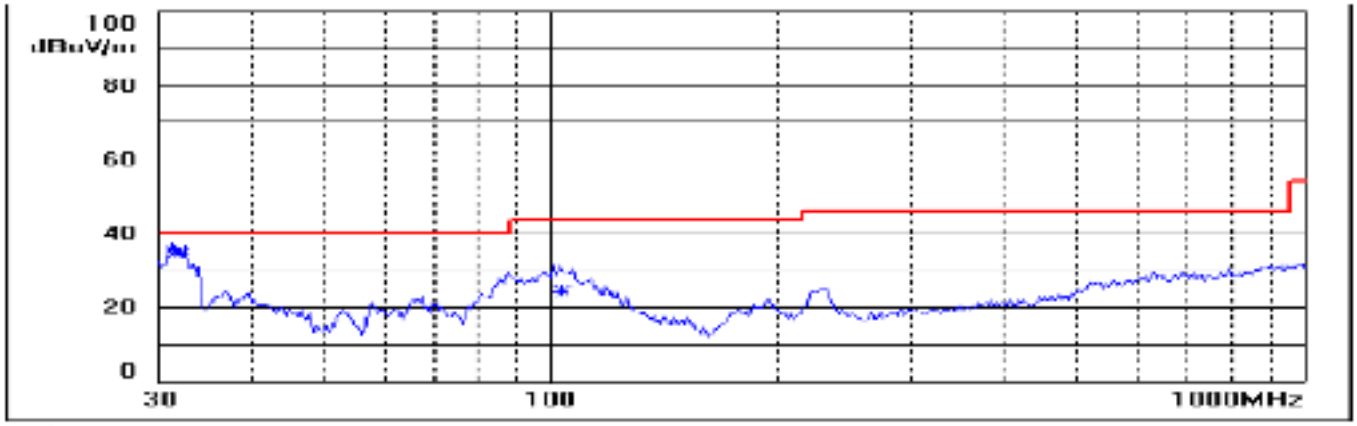
Polarization: Horizontal



MEASUREMENT RESULT

Frequency	Level	Limit
MHz	dBuV/m	dBuV/m
30.875	31.1	40

Polarization: Vertical



MEASUREMENT RESULT

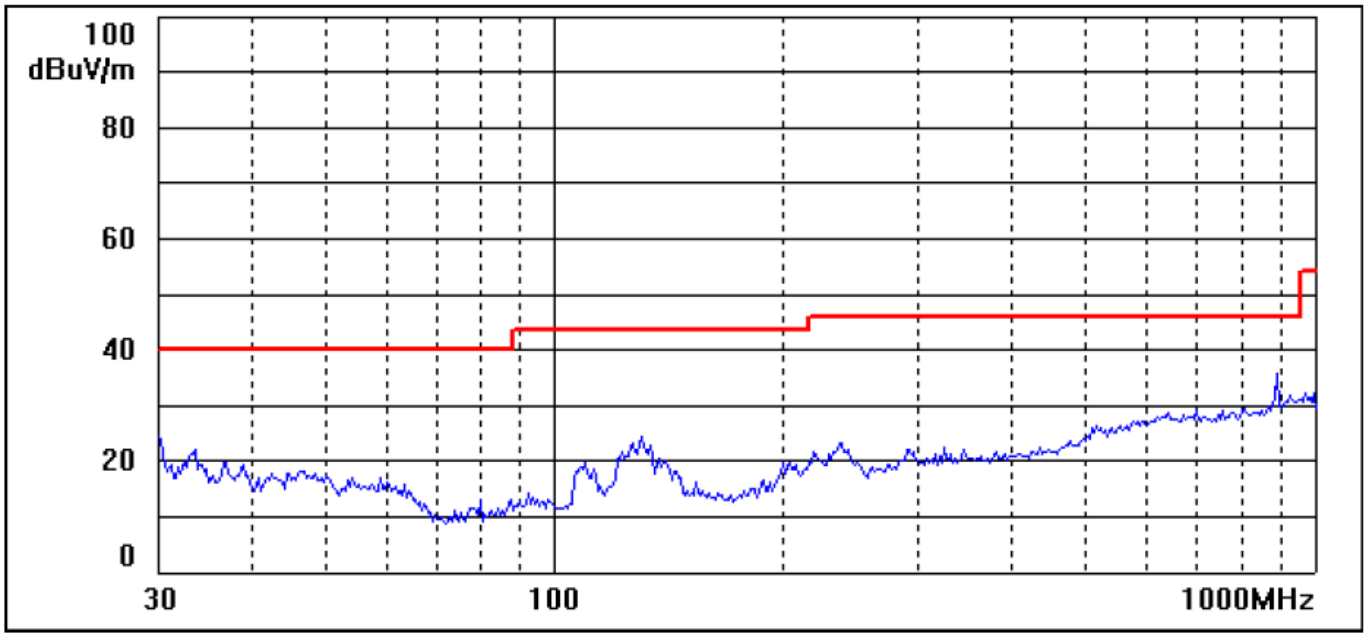
Frequency	Level	Limit
MHz	dBuV/m	dBuV/m
31.665	35	40
32.1875	34.4	40
32.1875	34.1	40
102.9075	24.1	40

Model : MN-A002-A090
Operation Mode : operating with resistance load
Test voltage : 120 Vac,60 Hz

	Date	Name
Tested by	2010-03-10	Mike Zhuo

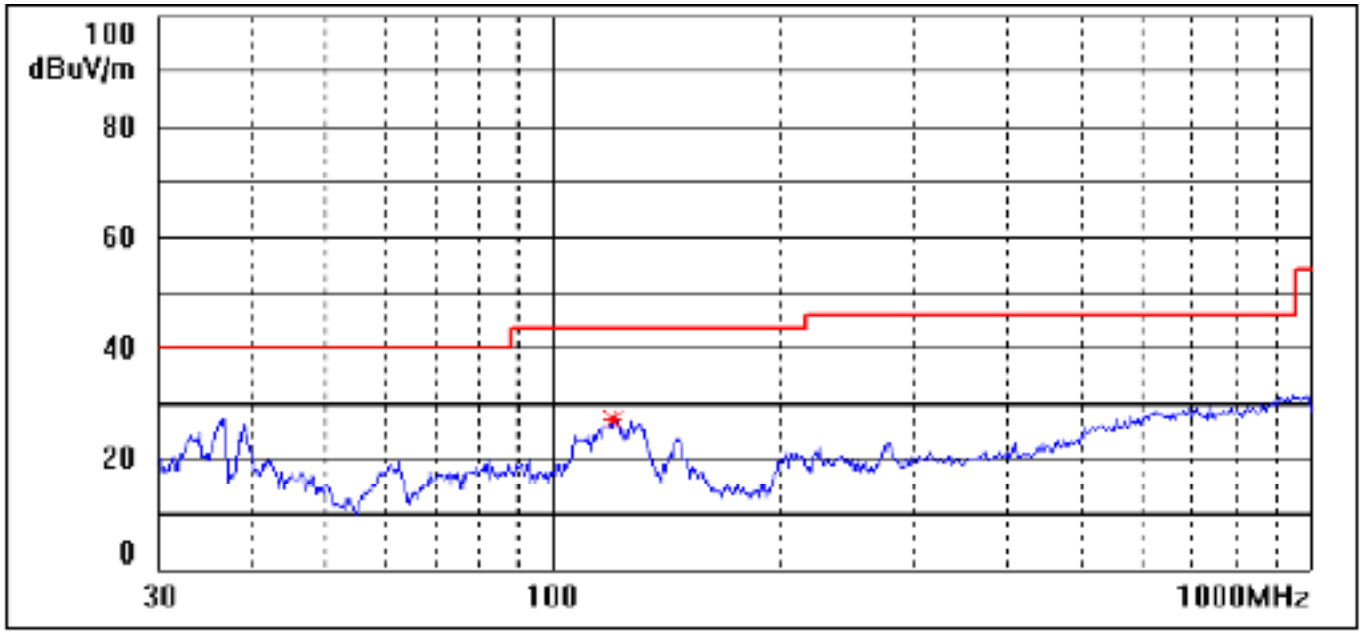
Radiated Emission (30MHz-1000MHz)

Polarization: Horizontal



No emission was detected within 10dB margin

Polarization: Vertical



No emission was detected within 10dB margin

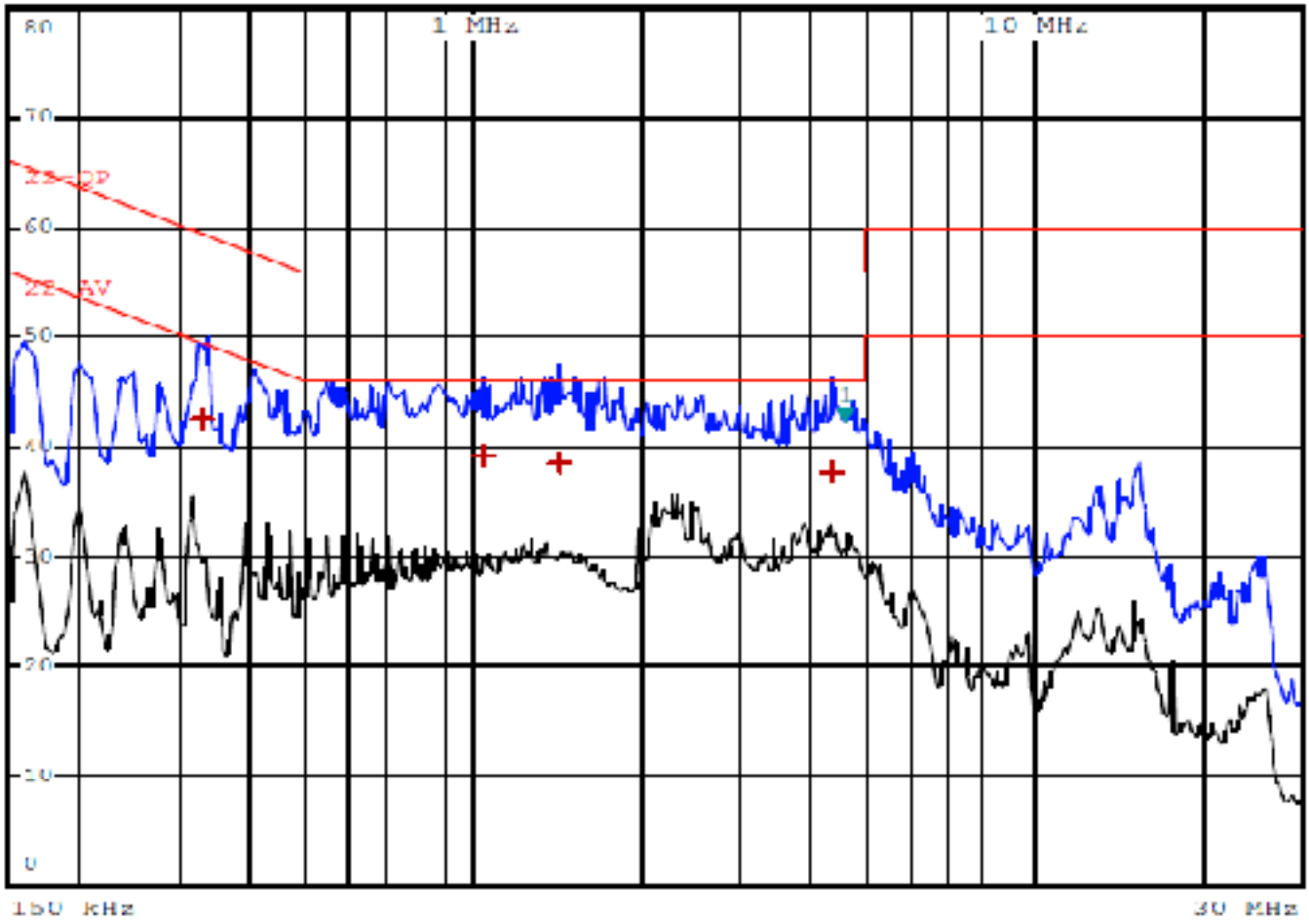
Model	: MN-A002-A080
Operation Mode	: operating with resistance load
Test voltage	: 120 Vac,60 Hz

	Date	Name
Tested by	2010-03-02	Mike Zhuo

Conducted Emissions
FCC Part 15 Section 15.107 Requirements

Test Requirement:	FCC Part15 Subpart B
Test Method:	ANSI C63.4: 2003
Frequency Range:	150KHz to 30MHz
Class / Severity:	Class B
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth)
	Quasi-Peak if maximised peak within 6dB of Quasi-Peak limit

Conducted Emission (150KHz-30MHz)

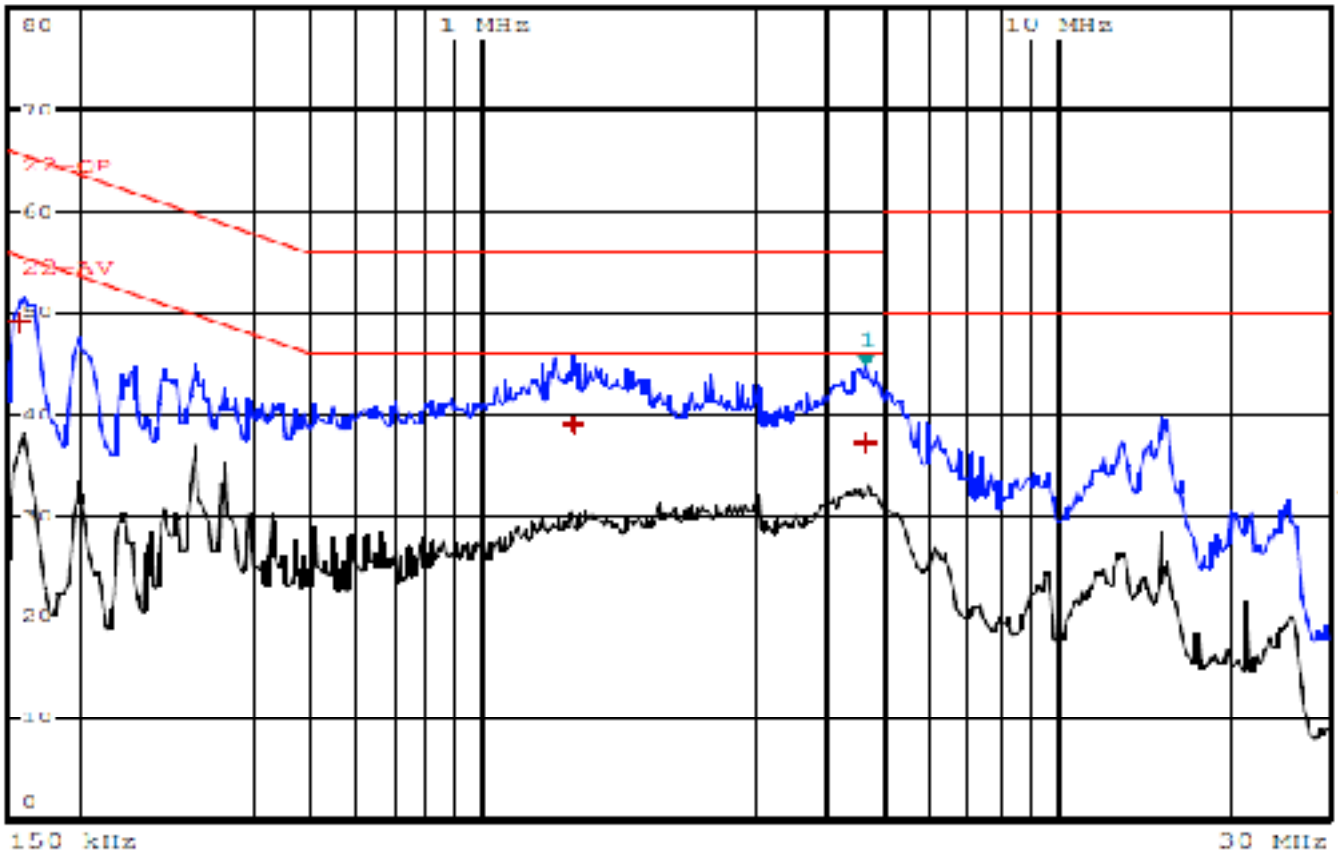


TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
Quasi Peak	334 kHz	42.53	-16.81
Quasi Peak	1.054 MHz	39.17	-16.83
Quasi Peak	1.394 MHz	34.31	-17.69
Quasi Peak	2.192 MHz	37.80	-18.20

Model : MN-A002-A090
Operation Mode : operating with resistance load
Test voltage : 120 Vac,60 Hz
Conduct Line/Port : L

	Date	Name
Tested by	2010-03-09	Mike Zhuo

Conducted Emission (150KHz-30MHz)

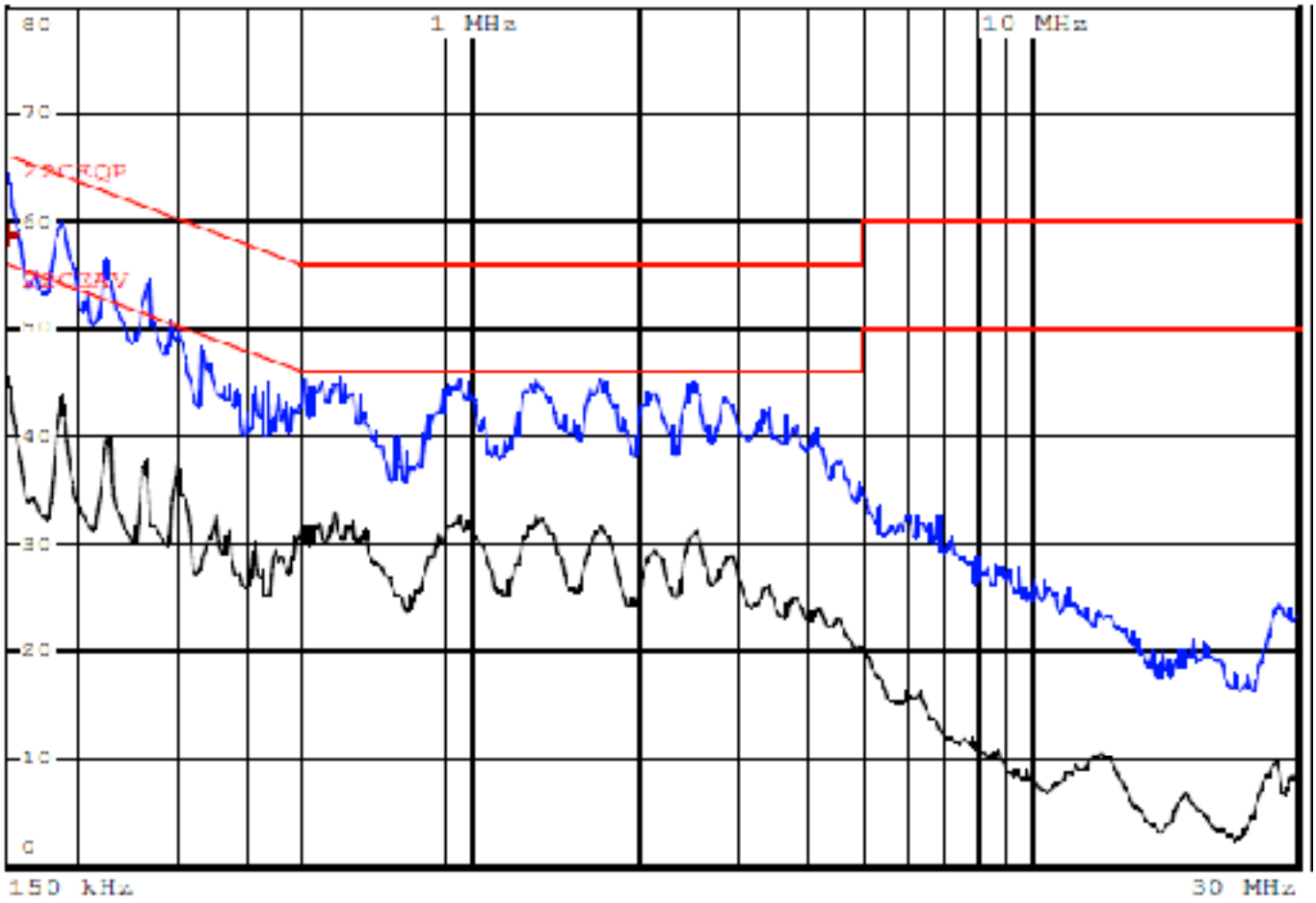


TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
Quasi Peak	150 kHz	49.11	16.45
Quasi Peak	1.442 MHz	38.86	-17.13
Quasi Peak	4.676 MHz	37.14	-18.85

Model : MN-A002-A090
Operation Mode : operating with resistance load
Test voltage : 120 Vac,60 Hz
Conduct Line/Port : N

	Date	Name
Tested by	2010-03-09	Mike Zhuo

Conducted Emission (150KHz-30MHz)

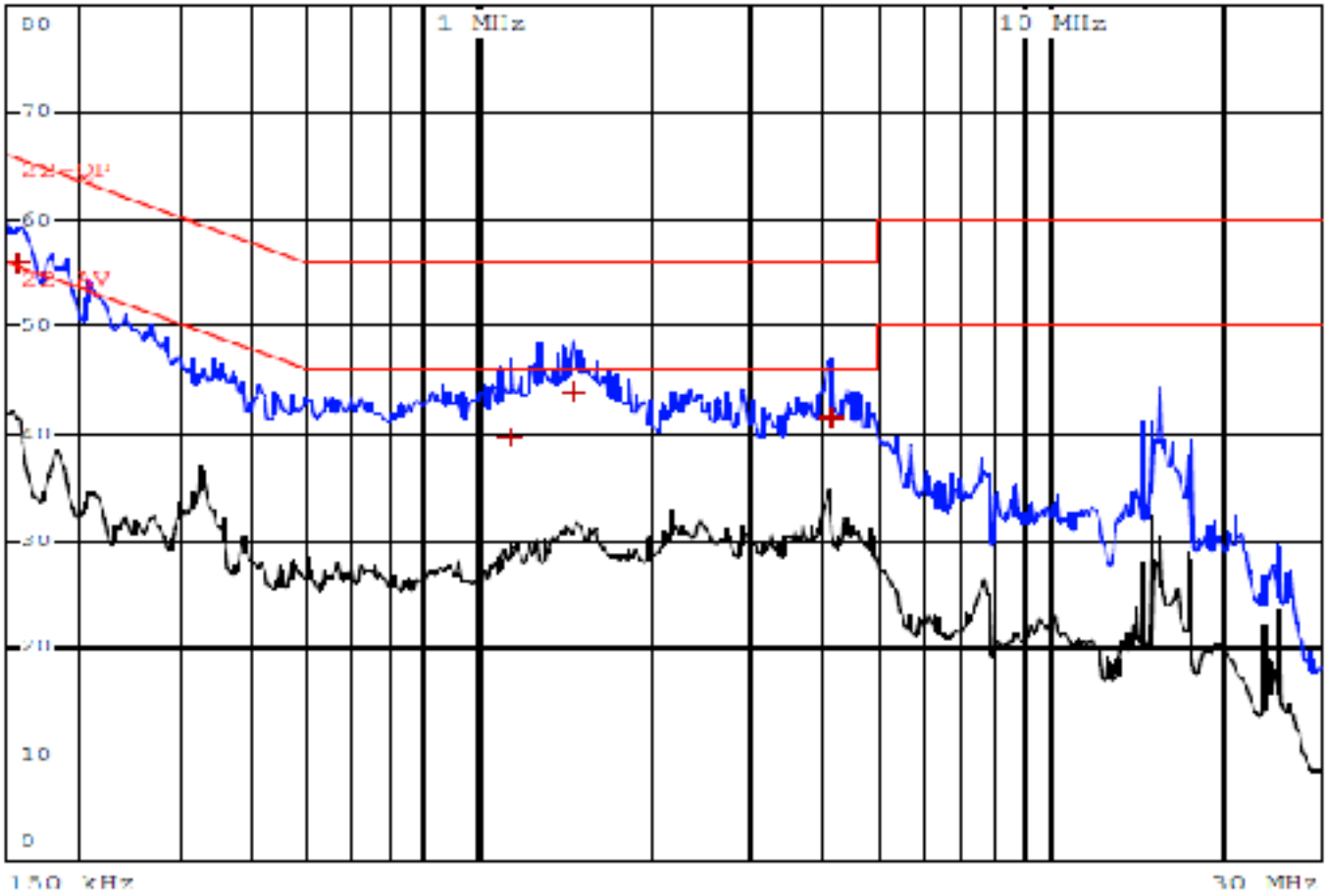


TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
Quasi Peak	158 kHz	57.43	-8.13
Quasi Peak	298 kHz	44.84	-15.45
Quasi Peak	1.23 MHz	39.65	-16.34
Quasi Peak	1.458 MHz	39.66	-16.33
Average	4.112 MHz	29.58	-16.41
Quasi Peak	4.164 MHz	41.72	-14.27

Model : MN-A002-A080
Operation Mode : operating with resistance load
Test voltage : 120 Vac,60 Hz
Conduct Line/Port : L

	Date	Name
Tested by	2010-03-02	Mike Zhuo

Conducted Emission (150KHz-30MHz)



TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
Quasi Peak	158 kHz	56.02	-9.53
Quasi Peak	1.138 MHz	39.52	-16.47
Quasi Peak	1.474 MHz	43.88	-12.11
Quasi Peak	4.164 MHz	41.37	-14.62

Model : MN-A002-A080
Operation Mode : operating with resistance load
Test voltage : 120 Vac,60 Hz
Conduct Line/Port : N

	Date	Name
Tested by	2010-03-02	Mike Zhuo

EMC IMMUNITY - TEST REPORT

Report Number	:	**64.760.10.5012.01– (I)**	Date of Issue:	2009-12-03

Model / Serial No.	:	MN-A001-A08Z, MN-A002-A08Z, MN-A001-A09Z, MN-A002-A09Z, MN-A003-A09Z (Z=0-9, a-z or A-Y indicates series number, the output current range is from 100mA to 300mA by step of 10mA) / NIL
Product Type	:	AC Power Adaptor
Applicant	:	XIAMEN METROTEC INDUSTRY CO.,LTD.
Manufacturer	:	XIAMEN METROTEC INDUSTRY CO.,LTD.
License holder	:	XIAMEN METROTEC INDUSTRY CO.,LTD.
Address	:	NO.46, Meixi Road, Eastern Sea Rim, Siming Industrial Park, Tongan,
	:	Xiamen, PEOPLE'S REPUBLIC OF CHINA
Test Result	:	■ **Positive** ☐ **Negative**
Total pages including Appendices	:	**33**

JIANGSU TÜV PRODUCT SERVICE LTD. GUANGZHOU BRANCH reports apply only to the specific samples tested under stated test conditions. Construction of the actual test samples has been documented. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. The manufacturer/importer is responsible to the Competent Authorities in Europe for any modifications made to the production units which result in non-compliance with the relevant regulations. Jiangsu TÜV Product Service Ltd. Guangzhou Branch shall have no liability for any deductions, inferences or generalizations drawn by the client or others from Jiangsu TÜV Product Service Ltd. Guangzhou Branch issued reports.

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DIRECTORY - IMMUNITY

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IMMUNITY TEST REGULATIONS :

The immunity tests were performed according to the following regulations :

■ - EMC - Directive 2004/108/EC and its amendments

☐ - EN 61000-6-1: 2001
☐ - EN61000-6-2: 2005
☐ - EN 55020:2002+A1:2003+A2:2005
☐ - EN 55014-2:1997+A1:2001
■ - EN 55024:1998+A1:2001+A2:2003

■ - IEC 61000-4-2:1995+A1:1998+A2:2000
■ - IEC 61000-4-3:2002+A1:2002
■ - IEC 61000-4-4:2004
■ - IEC 61000-4-5:1995+A1:2000
■ - IEC 61000-4-6:1996+A1:2000
☐ - IEC 61000-4-8:1993+A1:2000
■ - IEC 61000-4-11:2004

☐ - ENV 50204

☐ - EN 60601-1-2 / 2001

☐ - EN 61547:1995+A1:2000

Note: For undated references, the latest edition of the publication at the time of testing (including amendments) was applied.

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Environmental Conditions In The Laboratory:

	Actual
Temperature:	: 23°C
Relative Humidity:	: 55%
Atmospheric Pressure:	: 1040mBar

Power Supply Utilized:

Power supply system : 240V / 50Hz / 1ϕ

STATEMENT OF MEASUREMENT UNCERTAINTY

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities that can account for a nominal measurement error of ±4dB. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Symbol Definitions:

■ - Applicable
☐ - Not Applicable

Test laboratory:

☐ - CEST
Add: No. 2437 Xingang East Road, Haizhu District, Guangzhou 510330 P.R.C

☐ - CEPREI
Add: No 110 Dongguanzhuang Road, Tianhe District, Guangzhou 510610 P. R. C.

■ - TÜV Product Service Ltd. Guangzhou Branch
Add: 26/F, Dongbao Tower, #767 Dongfeng Road East. (510600) Guangzhou, P.R.China

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Immunity Test Conditions: ELECTROSTATIC DISCHARGE (ESD)

The immunity against *ELECTROSTATIC DISCHARGE (ESD)* events was performed in the following location:

☐ **- Test not applicable**

■ - Test Area (TUV-SUD) –Laboratory open area

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
■ -	NSG435	SCHAFFNER	ESD Simulator System	TUV-SUD
■ -	---	TUV-SUD	H/V Coupling Plane	TUV-SUD

Remarks: All test equipments used are calibrated on a regular basis

Test Specification:

Discharge Voltage (Air): ■ - 2 kV ■ - 8 kV ☐ - 6 kV
■ - 4 kV ☐ - 15 kV ☐ - _ kV

Discharge Voltage (Contact): ■ - 2 kV ☐ - 6 kV ☐ - _ kV
■ - 4 kV ☐ - 8 kV

Discharge Impedance: ■ - 330 Ω / 150 pF ☐ - 150 Ω / 150 pF

Discharge Repetition Rate: ■ - ≥ 1 sec.

Number of Discharges: ■ - ≥ 50 at all locations

Kind of Discharges: ■ - Air discharge ■ - Conducted discharge (relay)
■ - Direct ■ - Indirect

Polarity: ■ - Positive ■ - Negative

Location of Discharge: ■ - See Data Record(s) in Appendix A
■ - Each location on the surface touchable by hand
☐ - See drawing in Appendix A
☐ - _____

Result :

■ - No degradation of function - Met Criterion A
☐ - Distortion of function - Met Criterion B
☐ - Error of function - Met Criterion C
☐ - Loss of function - Unrecoverable Failure

Remarks: _____

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Immunity Test Conditions: RADIATED ELECTROMAGNETIC FIELDS

The immunity against *RADIATED ELECTROMAGNETIC FIELDS* exposure was performed in the following location:

☐ **- Test not applicable**

☐ - Test Area (CEPREI) - Anechoic ferrite lined shielded room
■ - Test Area (GRGT) - Anechoic ferrite lined shielded room

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
☐ -	150W1000A	Amplifier Research	Power Amplifier	CEPREI
☐ -	7122	EMCO	Probe	CEPREI
☐ -	8640B	HP	Signal Generator	CEPREI
☐ -	3142B	ETS	Antenna	CEPREI
☐ -	2090	ETS	Muiti-Device Controller	CEPREI
☐ -	Y21953	ETS-LINDGREN	Video Control Unit	CEPREI
☐ -	RFD-F-100	ETS-LINDGREN	High Performance Shielding Room	CEPREI
■ -	STLP9128E	Schwarzbeck	Antenna	GRGT
☐ -	BBHA9120E	Schwarzbeck	Horn antenna	GRGT
■ -	966	ETS-Lindgren	Anechoic chamber	GRGT
■ -	Rohde & Schwarz	SML03	Signal generator	GRGT
■ -	PRANA	AP32DT214	Amplifier	GRGT
■ -	PRANA	AP32SV150A	Amplifier	GRGT
■ -	Boonton	4232A	Power meter	GRGT
■ -	ETS-Lindgren	RadiSense	Field sensor	GRGT

Remarks: All test equipments used are calibrated on a regular basis.

Test Specification:

Frequency Range:	☐ - 27 MHz - 500 MHz	☐ - 26 MHz - 1000 MHz
	☐ - 9 kHz - 27 MHz	■ - 80 MHz - 1000 MHz
Field Strength:	☐ - 1 V/m	■ - 3 V/m
	☐ - 10 V/m	☐ - _ V/m
Distance Antenna - EUT:	☐ - 1 m	■ - 3 m

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Test Specification (continued):

Modulation:	■ - AM :	80%	1kHz
	☐ - FM :	__ kHz dev.	__ kHz
	■ - sine wave:		
	☐ - unmodulated		
	☐ - Pulse	ON/OFF	Duty Cycle: __ %
Step:	☐ -< 0.015 decades / sec		■ - 1%
Polarization of Antenna:	■ - Horizontal	■ - Vertical	

Result :

■ - No degradation of function	- Met Criterion A
☐ - Distortion of function	- Met Criterion B
☐ - Error of function	- Met Criterion C
☐ - Loss of function	- Unrecoverable Failure

Remarks: _____

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Immunity Test Conditions: FAST TRANSIENTS (BURST)

The immunity against *FAST TRANSIENTS (BURST)* events was performed in the following test location:

☐ **- Test not applicable**

■ - Test Area (TUV-SUD) –Laboratory open area

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
■ -	MODULA6150	Teseq	Immunity test system	TUV-SUD
☐ -	CDN8014	Teseq	Coupling Clamp	TUV-SUD

Remarks: All test equipments used are calibrated on a regular basis.

Test Specification:

Pulse Amplitude - AC Power Port:	■ - 1,0 kV	☐ - 2,0 kV	
	☐ - 4,0 kV	☐ - ___ kV	
Pulse Amplitude - DC Power Port:	☐ - 1,0 kV	☐ - 2,0 kV	
	☐ - 4,0 kV	☐ - ___ kV	
Pulse Amplitude - Signal/Data	☐ - 0,5 kV	☐ - 1,0 kV	
Non control Port:	☐ - 2,0 kV	☐ - ___ kV	
Pulse Amplitude - Process:	☐ - 0,5 kV	☐ - 1,0 kV	
Measurement & Control Port	☐ - 2,0 kV	☐ - ___ kV	
Burst Frequency:	☐ - 2,5 kHz	■ - 5,0 kHz	☐ - ___ kHz
Time of Coupling:	☐ - 60 seconds	■ - 120 seconds	☐ - ___ seconds
Coupling Method:	■ - Coupling/decoupling network		☐ - Coupling clamp
Polarity:	■ - Positive	■ - Negative	

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Immunity Test Conditions: **FAST TRANSIENTS (BURST)**, continued

Location of Coupling:

name of lines:	AC POWER CORD		
type of lines:	☐ - shielded	■ - unshielded	
status of lines:		☐ - passive	■ - active
kind of transmission:		■ - analog	☐ - digital
length of lines:			
name of lines:			
type of lines:	☐ - shielded	☐ - unshielded	
status of lines:		☐ - passive	☐ - active
kind of transmission:		☐ - analog	☐ - digital
length of lines:			
name of lines:			
type of lines:	☐ - shielded	☐ - unshielded	
status of lines:		☐ - passive	☐ - active
kind of transmission:		☐ - analog	☐ - digital
length of lines:			

Result :

■ - No degradation of function	- Met Criterion A
☐ - Distortion of function	- Met Criterion B
☐ - Error of function	- Met Criterion C
☐ - Loss of function	- Unrecoverable Failure

Remarks:

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Immunity Test Conditions: SURGE TRANSIENTS

The immunity against *SURGE TRANSIENTS* events was performed in the following test location:

☐ **- Test not applicable**

☐ - Test Area (CEPREI) - Laboratory open area
☐ - Test Area (CEST) – Laboratory open area
■ - Test Area (TUV-SUD) –Laboratory open area

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
☐ -	NSG2050	SCHAFFNER	Surge Generator	CEPREI
☐ -	CDN131/133	SCHAFFNER	Surge Coupling System	CEPREI
☐-	CE-500	KEYTEK	Surge Generator	CEST
■ -	MODULA6150	Teseq	Immunity test system	TUV-SUD

Remarks: All test equipments used are calibrated on a regular basis.

Test Specification:

Pulse Amplitude - AC Power Port:	■ - 1,0 kV	☐ - 2,0 kV
	☐ - 4,0 kV	☐ - ___ kV
Pulse Amplitude - DC Power Port:	☐ - 1,0 kV	☐ - 2,0 kV
	☐ - 4,0 kV	☐ - ___ kV
Pulse Amplitude - Signal/Data Non control Port:	☐ - 0,5 kV	☐ - 1,0 kV
	☐ - 2,0 kV	☐ - ___ kV
Pulse Amplitude - Process: Measurement & Control Port	☐ - 0,5 kV	☐ - 1,0 kV
	☐ - 2,0 kV	☐ - ___ kV
Source Impedance:	■ - 2 Ω + 18 µF	☐ - 12 Ω + 9 µF
	☐ - 42 Ω + 0,1 µF	☐ - 42 Ω + 0,5 µF
Number of Surges:	■ - 5 surges/angle	☐ - ___ surges /angle
Angle:	■ - 0 °	■ - 90 °
	■ - 180 °	■ - 270 °
Repetition Rate:	■ - 60 sec.	☐ - ___ sec.
Polarity:	■ - Positive	■ - Negative

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Immunity Test Conditions: SURGE TRANSIENTS, continued

Location of Coupling:

name of lines:	AC POWER CORD	
type of lines: ☐ - shielded	■ - unshielded	
status of lines:	☐ - passive	■ - active
kind of transmission:	■ - analog	☐ - digital
length of lines:		

name of lines:		
type of lines: ☐ - shielded	☐ - unshielded	
status of lines:	☐ - passive	☐ - active
kind of transmission:	☐ - analog	☐ - digital
length of lines:		

name of lines:		
type of lines: ☐ - shielded	☐ - unshielded	
status of lines:	☐ - passive	☐ - active
kind of transmission:	☐ - analog	☐ - digital
length of lines:		

Result:

■ - No degradation of function	- Met Criterion A
☐ - Distortion of function	- Met Criterion B
☐ - Error of function	- Met Criterion C
☐ - Loss of function	- Unrecoverable Failure

Remarks:

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Immunity Test Conditions: CONDUCTED DISTURBANCE

The immunity against *CONDUCTED DISTURBANCE* events, induced by radio frequency fields above 9 kHz, was performed in the following test location:

☐ **- Test not applicable**

■ - Test Area (TUV-SUD) –Laboratory open area

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
■-	CIT-10/75	Frankonia	C/S test generator	TUV-SUD
■-	59-6-33	Aero flex/Weinschel	6dB attenuator	TUV-SUD
■ -	M2+M3-801	Frankonia	CDN	TUV-SUD
☐ -	F-203I-32mm	FCC	EM Injected Clamp	TUV-SUD

Remarks: All test equipments used are calibrated on a regular basis.

Test Specification:

Frequency Range:	☐ - 0,15 MHz - 230 MHz		■ - 0,15 MHz - 80 MHz
Voltage Level (EMF):	☐ - 1 V	■ - 3 V	
	☐ - 10 V	☐ - __ V	
Modulation:	■ - AM :	80 %	1 kHz
	☐ - FM :	__ kHz dev.	___ kHz
	■ - sine wave:		
	☐ - unmodulated		
	☐ - Pulse	ON/OFF	Duty Cycle: __ %
Step:	■ -≤ 0.015 decades / sec		

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Immunity Test Conditions: **CONDUCTED DISTURBANCE**, continued

Location of Coupling:

name of lines:	AC POWER CORD		
type of lines:	☐ - shielded	■ - unshielded	
status of lines:		☐ - passive	■ - active
kind of transmission:		■ - analog	☐ - digital
length of lines:		28cm	
name of lines:			
type of lines:	☐ - shielded	☐ - unshielded	
status of lines:		☐ - passive	☐ - active
kind of transmission:		☐ - analog	☐ - digital
length of lines:			
name of lines:			
type of lines:	☐ - shielded	☐ - unshielded	
status of lines:		☐ - passive	☐ - active
kind of transmission:		☐ - analog	☐ - digital
length of lines:			

Result :

■ - No degradation of function	- Met Criterion A
☐ - Distortion of function	- Met Criterion B
☐ - Error of function	- Met Criterion C
☐ - Loss of function	- Unrecoverable Failure

Remarks:

Jiangsu TÜV Product Service Ltd. Guangzhou Branch

26/F, Dongbao Tower, #767 Dongfeng Road East. (510600) Guangzhou, P.R.China TEL: +86 20 3832 0668 FAX: +86 20 3832 0478

Immunity Test Conditions: RF FREQUENCY MAGNETIC FIELD

The immunity against *RF FREQUENCY MAGNETIC FIELD* exposure, induced by radio frequency fields above 9 kHz, was performed in the following test location:

■ - Test not applicable

☐ - Test Area A (CEST) - Laboratory open area
☐ - Test Area B (CEPREI) - Laboratory open area

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number	Cal. Dat
☐ -	----	KEYTEK	EMCPRO	SMQ	
☐ -	F-1000-4-8/9/10-L	KEYTEK	Coil	SMQ	
☐ -					
☐ -					
☐ -					

Remarks: All test equipments used are calibrated on a regular basis.

Test Specification:

Frequency Range:	☐ - 50 Hz	☐ - 60 Hz	☐ - 400 Hz
Field level (EMF):	☐ - 1 A/m ☐ - 30 A/m	☐ - 3 A/m ☐ - 100 A/m	☐ - 10 A/m ☐ - ___ A/m
Short Field (1-3 sec):	☐ - 300 A/m	☐ - 1000 A/m	☐ - ___ A/m
Duration:	☐ - __ seconds		
Axis of Orientation:	☐ - X-axis	☐ - Y-axis	☐ - Z-axis

Result :

☐ - No degradation of function - Met Criterion A
☐ - Distortion of function - Met Criterion B
☐ - Error of function - Met Criterion C
☐ - Loss of function - Unrecoverable Failure

Remarks: _____

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Immunity Test Conditions: VOLTAGE DIPS, INTERRUPTIONS & VARIATIONS

The immunity against *VOLTAGE DIPS, INTERRUPTIONS & VARIATIONS* events, induced by radio frequency fields above 9 kHz, was performed in the following test location:

☐ **- Test not applicable**

☐ - Test Area (CEPREI) - Laboratory open area
☐ - Test Area (CEST) – Laboratory open area
■ - Test Area (TUV-SUD) –Laboratory open area

Test Equipment Used :

	Model Number	Manufacturer	Description	Serial Number
☐ -	CEMASTER	KEYTEK	EMI Test System	CEPREI
☐ -	PLINE1610	HAEFELY	Mains Drop out Simulator	CEST
■ -	MODULA6150	Teseq	Immunity test system	TUV-SUD
■ -	INA6501	Teseq	Step power supply	TUV-SUD

Remarks: All test equipments used are calibrated on a regular basis.

Test Specification:

Nominal Mains Voltage (V_{NOM}): ■ - 240 Vac ■ -100Vac ☐ - ___ Vdc

Level of Reduction (dip): ■ - 500 mS at 30% of V_{NOM}
■ - 10 mS > 95% of V_{NOM}

Duration of Interruption (>.95*V_{NOM}): ☐ - 10 mS ■ - 5 S

Voltage Fluctuation: ☐ -V_{NOM} + 10% ☐ -V_{NOM} - 10%

Result :

☐ - No degradation of function - Met Criterion A
■ - Distortion of function - Met Criterion B
☐ - Error of function - Met Criterion C
☐ - Loss of function - Unrecoverable Failure

Remarks: Please see Annex A for details.

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Equipment Under Test (EUT) Test Operation Mode - Immunity Tests :

The equipment under test was operated under the following conditions during immunity testing :

☐ - Standby

☐ - Test Program (H - Pattern)

☐ - Test Program (Color Bar)

☐ - Test Program (Customer Specified)

■ - Normal Operating Mode

☐ - _____

_____

Configuration of the equipment under test:

■ - See Constructional Data Form in Appendix B - Page B2

■ - See Product Information Form(s) in Appendix B - Page B2

The following peripheral devices and interface cables were connected during the testing:

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

☐ - _____ Type : _____

■ - unshielded power cable

☐ - unshielded cables

☐ - shielded cables TÜVPS. No.: _____

☐ - customer specific cables

☐ - _____

☐ - _____

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GENERAL REMARKS:

The difference of the models listed in this report just lies in the parameters of some passive devises which will not influence immunity results.
Tests are applied to MN-A002-A080 only, other models are deemed to fulfil relevant immunity requirements without tests.

SUMMARY:

All tests according to the regulations cited on page 3 were

■ - Performed

☐ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements cited on page 3.

☐ - **Does not** fulfill the general approval requirements cited on page 3.

Testing Start Date: 2010-01-12

Testing End Date: 2010-01-14

- JIANGSU TÜV PRODUCT SERVICE LTD. GUANGZHOU BRANCH -

Reviewed by: Technical Certifier

Kitty Xu
Assistant Department Manager

Prepared by:

Mike Zhuo
EMC Test Engineer

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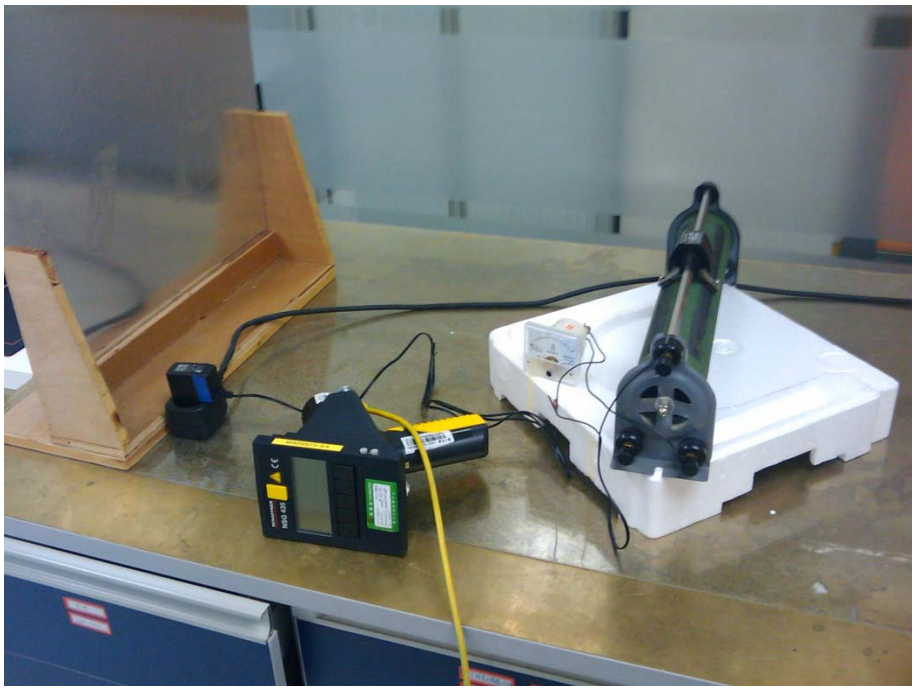
Photograph of Test Setup:
Electrostatic Discharge(ESD)

☐ **- Test not applicable**

IEC 61000-4-2



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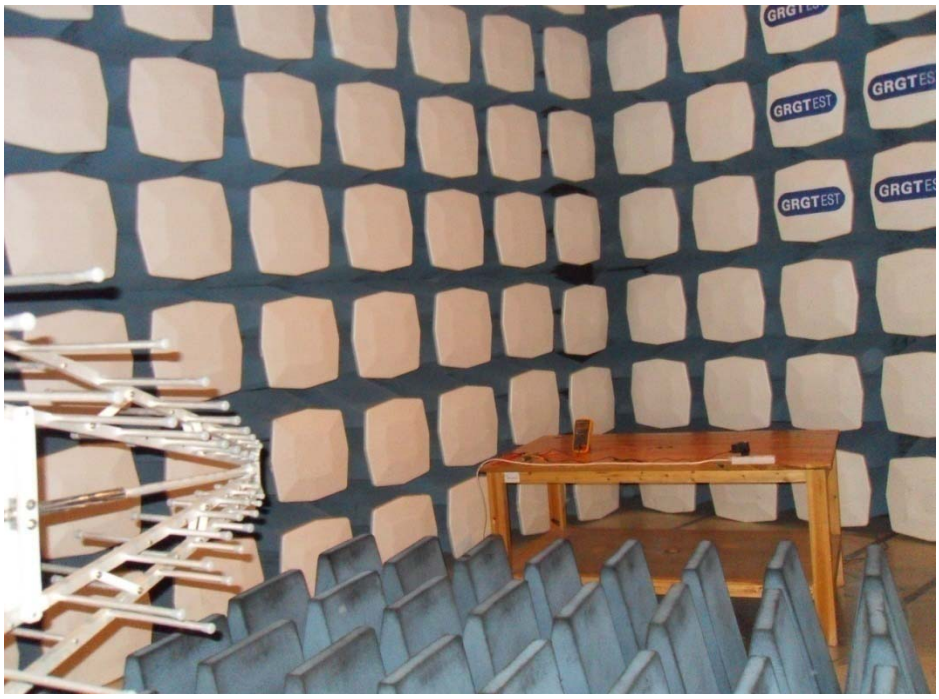
Photograph of Test Setup:
Radiated Electromagnetic Field

☐ **- Test not applicable**

IEC 61000-4-3



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Photograph of Test Setup:
Fast transients (BURST)

☐ **- Test not applicable**

IEC 61000-4-4

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Photograph of Test Setup:
S U R G E t r a n s i e n t s

☐ **- Test not applicable**

IEC 61000-4-5

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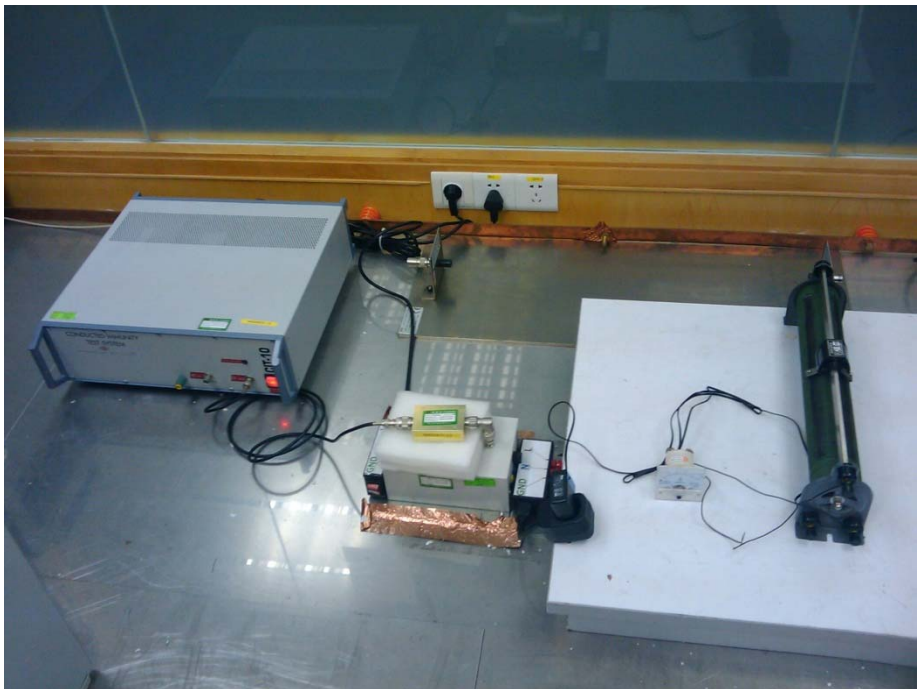
Photograph of Test Setup:
Conducted disturbance

☐ **- Test not applicable**

IEC 61000-4-6



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Photograph of Test Setup:
Voltage Dips, Interruptions & Variations

☐ **- Test not applicable**

IEC 61000-4-11

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Appendix A

Test Data Sheets

TEST DATA RECORD ESD # 1

Operating mode: operating with resistance load ☐ table-top unit ☐ floor-standing unit

Ambient Temperature(℃): 23 Relative Humidity(%): 55 Atmospheric Pressure(mbar): 1040

Testregulation:

☐ EN 55014-2	☐ EN 50082-2	☑ EN 55024
☐ EN 60601-1-2	☑ IEC 61000-4-2	☐ IEC 801-2
☐ EN 61547	☐ EN 61000-4-2	

Indirect discharge: ☐ Draw points in the appendix

Point	Contact kV			Number and Polarity at each Voltage Level	
1: VCP-Front Side	☑ ..2	☐ ..3	☑ ..4	☑ ..50 pos	☑ ..50 neg
	☐ ..6	☐ ..8	☐ ..	☐ .. pos	☐ .. neg
2: VCP-Right Side	☑ ..2	☐ ..3	☑ ..4	☑ ..50 pos	☑ ..50 neg
	☐ ..6	☐ ..8	☐ ..	☐ .. pos	☐ .. neg
3: VCP-Rear Side	☑ ..2	☐ ..3	☑ ..4	☑ ..50 pos	☑ ..50 neg
	☐ ..6	☐ ..8	☐ ..	☐ .. pos	☐ .. neg
4: VCP-Left Side	☑ ..2	☐ ..3	☑ ..4	☑ ..50 pos	☑ ..50 neg
	☐ ..6	☐ ..8	☐ ..	☐ .. pos	☐ .. neg
5: HCP-Front Side	☑ ..2	☐ ..3	☑ ..4	☑ ..50 pos	☑ ..50 neg
	☐ ..6	☐ ..8	☐ ..	☐ .. pos	☐ .. neg
6: HCP-Right Side	☑ ..2	☐ ..3	☑ ..4	☑ ..50 pos	☑ ..50 neg
	☐ ..6	☐ ..8	☐ ..	☐ .. pos	☐ .. neg
7: HCP-Rear Side	☑ ..2	☐ ..3	☑ ..4	☑ ..50 pos	☑ ..50 neg
	☐ ..6	☐ ..8	☐ ..	☐ .. pos	☐ .. neg
8: HCP-Left Side	☑ ..2	☐ ..3	☑ ..4	☑ ..50 pos	☑ ..50 neg
	☐ ..6	☐ ..8	☐ ..	☐ .. pos	☐ .. neg
9:	☐ ..2	☐ ..3	☐ ..4	☐ ..50 pos	☐ ..50 neg
	☐ ..6	☐ ..8	☐ ..	☐ .. pos	☐ .. neg

Remarks: VCP = Vertical Coupling Plane; HCP = Horizontal Coupling Plane.

Result: ☑ Complies ☐ Does not comply

Criterion Required: B Criterion Met: A

Model : MN-A002-A080

	Date	Name
Tested by	2010-01-13	Mike Zhuo

TEST DATA RECORD — ESD # 2

Ambient Temperature(℃): 23 Relative Humidity(%): 55 Atmospheric Pressure(mbar): 1040

Testregulation: ☐ EN 55014-2 / ☐ EN 60601-1-2 / ☐ EN 61547 — ☐ EN 50082-2 / ☑ IEC 61000-4-2 / ☐ EN 61000-4-2 — ☑ EN 55024 / ☐ IEC 801-2

Indirect discharge: ☐ Draw points in the appendix

Point	Contact kV		Air kV		Number and Polarity at each Voltage Level	
1. Each locations on the surface touchable by hand	☐ ..2 ☐ ..4 ☐ ..6 ☐ ..8	☐ ..1 ☐ ..	☐ ..2 ☐ ..4 ☐ ..8 ☐ ..		☐ ..50 pos ☐ .. pos	☐ ..50 neg ☐ .. neg
2. Each locations on the surface touchable by hand	☐ ..2 ☐ ..4 ☑ ..6 ☐ ..8	☐ ..1 ☐ ..	☑ ..2 ☑ ..4 ☑ ..8 ☐ ..	☑ ..1 ☐ ..	☑ ..10 pos ☐ .. pos	☑ ..10 neg ☐ .. neg
3:	☐ ..2 ☐ ..4 ☐ ..6 ☐ ..8	☐ ..1 ☐ ..	☐ ..2 ☐ ..4 ☐ ..8 ☐ ..	☐ ..1 ☐ ..	☐ ..10 pos ☐ .. pos	☐ ..10 neg ☐ .. neg
4:	☐ ..2 ☐ ..4 ☐ ..6 ☐ ..8	☐ ..1 ☐ ..	☐ ..2 ☐ ..4 ☐ 8 ☐	☐ ..4	☐ ..10 pos ☐ pos	☐ ..10 neg ☐ neg
5:	☐ ..2 ☐ ..4 ☐ 6 ☐ 8	☐ ..1 ☐	☐ ..2 ☐ ..4 ☐ ..8 ☐ ..	☐ ..1 ☐ ..	☐ ..10 pos ☐ .. pos	☐ ..10 neg ☐ .. neg
6:	☐ ..2 ☐ ..4 ☐ ..6 ☐ ..8	☐ ..1 ☐ ..	☐ ..2 ☐ ..4 ☐ ..8 ☐ ..	☐ ..1 ☐ ..	☐ ..10 pos ☐ .. pos	☐ ..10 neg ☐ .. neg
7:	☐ ..2 ☐ ..4 ☐ ..6 ☐ ..8	☐ ..1 ☐ ..	☐ ..2 ☐ ..4 ☐ ..8 ☐ ..	☐ ..1 ☐ ..	☐ ..10 pos ☐ .. pos	☐ ..10 neg ☐ .. neg
8:	☐ ..2 ☐ ..4 ☐ ..6 ☐ ..8	☐ ..1 ☐ ..	☐ ..2 ☐ ..4 ☐ ..8 ☐ ..	☐ ..1 ☐ ..	☐ ..10 pos ☐ .. pos	☐ ..10 neg ☐ .. neg
9:	☐ ..2 ☐ ..4 ☐ ..6 ☐ ..8	☐ ..1 ☐ ..	☐ ..2 ☐ ..4 ☐ ..8 ☐ ..	☐ ..1 ☐ ..	☐ ..10 pos ☐ .. pos	☐ ..10 neg ☐ .. neg
10:	☐ ..2 ☐ ..4 ☐ ..6 ☐ ..8	☐ ..1 ☐ ..	☐ ..2 ☐ ..4 ☐ ..8 ☐ ..	☐ ..1 ☐ ..	☐ ..10 pos ☐ .. pos	☐ ..10 neg ☐ .. neg
11:	☐ ..2 ☐ ..4 ☐ ..6 ☐ ..8	☐ ..1 ☐ ..	☐ ..2 ☐ ..4 ☐ ..8 ☐ ..	☐ ..1 ☐ ..	☐ ..10 pos ☐ .. pos	☐ ..10 neg ☐ .. neg

Remarks: _____

Result: ☑ Complies ☐ Does not comply

Criterion Required: B Criterion Met: A

Model : MN-A002-A080

	Date	Name
Tested by	2010-01-13	Mike Zhuo

China

TEST DATA RECORD

Radiation Immunity

Operating mode: operating with resistance load ☐ table-top unit ☐ floor-standing unit

Ambient Temperature(℃): 23 Relative Humidity(%): 55 Atmospheric Pressure(mbar): 1040

Testregulation:

☐ EN 50082-1	☐ EN 50082-2	☑ EN 55024
☐ EN 60601-1-2	☑ IEC 61000-4-3	☐ EN 61000-4-3
☐ EN 61547	☐ Customer Specified	☐ _____

U T : 240VAC

r.f. electromagnetic field: 1KHz, 80% AM

Test Range: 80--1000MHz

Field strength: 3V/m

Remarks: _____

Result: ☑ Complies ☐ Does not comply

Criterion Required: A Criterion Met: A

Model : MN-A002-A080

	Date	Name
Tested by	2010-01-12	Mike Zhuo

China

TEST DATA RECORD EFT/BURST # 1

Operating mode: operating with resistance load tabletop unit floor-standing unit

Ambient Temperature(℃): 23 Relative Humidity(%): 55 Atmospheric Pressure(mbar): 1040

Testregulation:

- EN 55014-2
- EN 61000-3-2
- EN 61547
- EN 50082-2
- IEC 61000-4-4
- EN 61000-4-4
- EN 55024
- IEC 801-4

Coupling: Network Clamp

Repetition Rate: 5 kHz kHz Coupling Time: 1 minute 2 minutes

Point	Test Voltage (kV)						Criteria	
L1 (pos) to Ref Gnd	..0.5	..1	..2	..4	..	..A	..B	..C
L1 (neg) to Ref Gnd	..0.5	..1	..2	..4	..	..A	..B	..C
N (pos) to Ref Gnd	..0.5	..1	..2	..4	..	..A	..B	..C
N (neg) to Ref Gnd	..0.5	..1	..2	..4	..	..A	..B	..C
PE (pos) to Ref Gnd	..0.5	..1	..2	..4	..	..A	..B	..C
PE (neg) to Ref Gnd	..0.5	..1	..2	..4	..	..A	..B	..C
L1+N (pos) to Ref Gnd	..0.5	..1	..2	..4	..	..A	..B	..C
L1+N (neg) to Ref Gnd	..0.5	..1	..2	..4	..	..A	..B	..C
L1+N+PE (pos) to Ref Gnd	..0.5	..1	..2	..4	..	..A	..B	..C
L1+N+PE (neg) to Ref Gnd	..0.5	..1	..2	..4	..	..A	..B	..C

Remarks: _____

Result: Complies Does not comply

Criterion Required: B Criterion Met: A

Model : MN-A002-A080

	Date	Name
Tested by	2010-01-13	Mike Zhuo

TEST DATA RECORD SURGE

Operating mode: operating with resistance load ☐ table top unit ☐ floor standing unit

Ambient Temperature(℃): 23 Relative Humidity(%): 55 Atmospheric Pressure(mbar): 1040

Testregulation: ☐ CN 55014 2 ☐ EN 61547 ☐ EN 50082-2 ☑ IEC 61000-4-5 ☐ EN 61000-4-5 ☑ EN 55024 ☐ pr IDC 001 5

TEST LEVEL kV	PHASE ANGLE	# OF SURGES (+)	# OF SURGES (-)	SURGE L/PE	SURGE N/PE	SURGE L/N	EUT COMPLIES? YES	EUT COMPLIES? NO	REMARKS
1	0°	5		☑	☑	☑	Y		
1	0°		5	☑	☑	☑	Y		
1	90°	5		☑	☑	☑	Y		
1	90°		5	☑	☑	☑	Y		
1	180°	5		☑	☑	☑	Y		
1	180°		5	☑	☑	☑	Y		
1	270°	5		☑	☑	☑	Y		
1	270°		5	☑	☑	☑	Y		
				☐	☐	☐			
				☐	☐	☐			
				☐	☐	☐			
				☐	☐	☐			
				☐	☐	☐			
				☐	☐	☐			
				☐	☐	☐			
				☐	☐	☐			
				☐	☐	☐			
				☐	☐	☐			
				☐	☐	☐			
				☐	☐	☐			
				☐	☐	☐			
				☐	☐	☐			

Remarks: _____

Result: ☑ Complies ☐ Does not comply

Criterion Required: B Criterion Met: A

Model : MN-A002-A080

	Date	Name
Tested by	2010-01-13	Mike Zhuo

TEST DATA RECORD

Conducted Immunity

Operating mode: operating with resistance load ☐ table top unit ☐ floor-standing unit

Ambient Temperature(°C): 23 Relative Humidity(%): 55 Atmospheric Pressure(mbar): 1040

Testregulation:

☐ EN 55014-2	☐ CN 50082-2	☑ EN 55024
☐ CN 60601-1-2	☑ IEC 61000-4-6	☐ EN 61000-4-6
☐ EN 61547	☐ Customer Specified	☐ _____

U T : 240VAC

r.f. current commom mode:	1KHz, 80% AM
Test Range:	0.15--80MHz
Test Voltage:	3V
Source Impedance:	150ohm

Remarks: _____

Result: ☑ Complies ☐ Does not comply

Criterion Required: A Criterion Met: A

Model : MN-A002-A080

	Date	Name
Tested by	2010-01-13	Mike Zhuo

China

TEST DATA RECORD

Voltage Dips & Short Interruptions

Operating mode: operating with resistance load ☐ table top unit ☐ floor-standing unit

Ambient Temperature(°C): 23 Relative Humidity(%): 55 Atmospheric Pressure(mbar): 1040

Test regulation:

☐ EN 55014-2 ☐ EN 50082-2 ☑ EN 55024

☐ EN 60601-1-2 ☑ IEC 61000-4-11 EN 61000-4-11

☐ EN 61547 ☐ Customer Specified ☐ _____

U_T : 240VAC/100VAC

Test Level % U_T	Dips & Interruptions % U_T	Duration (in period) /s	Criterion required	Criterion	Remark
70	30	25/500ms	C	A	
0	100	0.5 / 10ms	B	A	
0	100	250/5s	C	B	

Remarks: The EUT stopped work when each 100%/250P voltage dip was applied, but it can be recovered by itself but it can be recovered by itself once the influence removed.

Result: ☑ Complies ☐ Does not comply

Criterion Required: C Criterion Met: B

Model : MN-A002-A080

	Date	Name
Tested by	2010-01-13	Mike Zhuo

Appendix B

Constructional Data Form

and

Product Information Form(s)

Refer to Emission Test Report

Any safety relevant information or constructional aspect concerning the sample or equipment under test as submitted by the applicant / report holder / certificate holder or any authorized agent is deemed to have no adverse effect on the electromagnetic compatibility (EMC) performance. Insofar as safety or compliance with Low Voltage Directive (LVD) or any relevant directive is concerned, the applicant / report holder / certificate holder or any authorized agent is required, by virtue of the relevant EU Directive provisions, to have satisfied that the product concerned (for which a sample was tested) meets with LVD or other relevant directives before placing it on the market.

Where applicable, changes or modifications made to the original sample submitted for testing are documented herein. The applicant or manufacturer shall ensure that such changes or modifications are applied to the production units. Any further changes or modifications made to the production units may void the validity of this test report unless such changes or modifications have been formally assessed by Jiangsu TÜV Product Service Ltd. Guangzhou Branch through technical evaluations or other means as appropriate and it has been confirmed that the EMC performance of such units is not adversely affected.

The enclosed, if any, circuit diagram / parts list / printed circuit board diagram / component layout / user manual are strictly for reference only. Jiangsu TÜV Product Service Ltd. Guangzhou Branch shall not be held responsible for any error or omission in such documents. It is the manufacturer's responsibility to ensure that production units conform to the tested sample.

Appendix C

Constructional Photographs

of

Equipment Under Test (EUT)

Refer to Emission Test Report

Any safety relevant information or constructional aspect concerning the sample or equipment under test as submitted by the applicant / report holder / certificate holder or any authorized agent is deemed to have no adverse effect on the electromagnetic compatibility (EMC) performance. Insofar as safety or compliance with Low Voltage Directive (LVD) or any relevant directive is concerned, the applicant / report holder / certificate holder or any authorized agent is required, by virtue of the relevant EU Directive provisions, to have satisfied that the product concerned (for which a sample was tested) meets with LVD or other relevant directives before placing it on the market.